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Outboard boat model—pg. 52

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Speaking of HOBBIES

These Don't Count

B 92810705 A

8 DIGITS

Got some interesting pictures here: from the top—1) 15-year-old Tommy Bothwell, Indianapolis high school freshman and 6-room house he is building. 2) A real "sky hook"—the first one we've ever seen; when you hang a belt as shown over the piece of plastic in the notch, center of gravity is located so you can actually place the plastic against the *end* of your finger and it'll hang there! NYC radio station WOR showed us this one. 3) Barby Blaine poses with world's largest Lockheed Super Constellation model—1/7th actual size; span 20′ 6″; model constructed by Creative Engineering Associates and sprayed with molten copper for electronic tests. 4) Jim Walker of American Junior Aircraft (Fireball, Firebaby, et al) and the inventor of U-Control modelplane flying told us about the serial number game you can play with any dollar bill (or $2, $5, $10, etc.); object is to guess any four digits which you think *aren't* on a bill held by your opponent; he then tries it out on yours; Jim's question was, "Can anybody tell me or express in formula form the chances against a person calling out four digits which don't appear?" Okay, you math whizzes, let's go to work!

That special subscription rate to "SOH" readers is still good until May 31, 1954: $3.00 for 12 issues of "ATH" if you live in U.S., its Possessions or Canada; just drop a note and $3 to Subscription Department #554A, Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y. Do it today!

Entries in our various design, photo and magic contests are coming in at a good clip, we're happy to report. In conjunction with the $10 for Hobby Club Emblems and group data which we run, we must ask that you send finished, printed emblems, not pencil sketches. And don't forget the photo contest for most realistic shots of sub models closes May 31, 1954. Prizes are $50 (first), $25 (2nd) and $10 (3rd). For the picture competition closing June 30, 1954, awards will go for most realistic poses of model vehicle(s): cars, wagons, carriages, etc. Same prize award schedule. And on July 31, 1954 we close our pix contest for most realistic posing of model planes (powered or non-powered, solid or built-up). Again, in picture competition which will end on August 31, 1954, we'll award $50 for 1st, $25 for 2nd and $10 for third place for most realistic model boat photos. Mark your entries "Realism-In-Models Photo Contest" and send entries for any of the divisions just as soon as you can.

It's time to salute the Police Boys Clubs across the country and specially commend the New York City Police Athletic League (PAL) which started this grand movement back in 1933. Yessir, May marks the 21st anniversary of the PAL in NYC! If you and your fellow citizens want information on setting up a similar group in your community any police department, service, military or civic organization official can obtain helpful information from Sgt. Harry Harwood, Police Athletic League, 400 Broome St., New York City 13. There are well over 100 police-sponsored youth groups throughout the U. S. today.

Good news for boat enthusiasts! ATH is readying a regular monthly column for all aqua fans. It'll have personal notes on who's doing what, club activities, boat contests, meets and regattas, new commercial developments of particular importance to builders in this field. So let us have news of boating in your area, names of local model boat clubs, who is most active, when you hold meetings. Also tell us what type of model boat material you want to see included in ATH: "class yachts"? power boats? shelf models? articles on special boat power plants? We want pictures, too, and will pay from five to ten dollars apiece for those we use. Payment of ten to 25 dollars will be made for sketches of boat hints, tricks and gadgets used (just send us a pencil sketch—we will make the final drawing). Address your material to "Aqua-tivities," Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

Air Trails HOBBIES For Young Men published monthly by Street & Smith Publications, Inc., at 575 Madison Ave., New York 22, N. Y. Entered as second class matter at the post office at New York, N. Y. Authorized as second class mail Post Office Dept., Ottawa, Canada. Copyright 1954 by Street & Smith Publications, Inc., in the United States and countries signatory to the Berne Convention and Pan American Convention. 35c per copy. This issue is Vol. XLII, No. 3. Please advise us if you move; allow four weeks for change of address. Give old and new address when notifying us. Subscription correspondence should be addressed to Subscription Dept., Street & Smith Publications, Inc., 304 E. 45th St., New York 17, N. Y. All characters used in fiction and semi-fiction stories in this magazine are fictitious. We cannot accept responsibility for unsolicited manuscripts or art work. All submissions must include return postage. Printed in 3 U.S.A.

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Buried in This Ad

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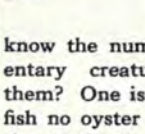
■ *Between the Tides* by Philip Street (Philosophical Library, New York, N. Y., 175 pages, $4.75) is a fascinating story of animal life on the seashore. Described are those animals found high on that portion of the shore covered by water only at high tide, as well as the group of animal life found low on the shore seldom uncovered by water except at very low tide, and the means nature has provided for the survival of both types. The dominant beach vegetation marks the shore, so the young naturalist learns to associate the animal life zones with the corresponding seaweed areas. Especially interesting is the chapter on oysters and mollusks. Do you know the number of enemies these sedentary creatures have preying upon them? One is the starfish. To the starfish no oyster or mussel is too large. If the victim is too big for the starfish's mouth, this villain turns his stomach inside out through his mouth, places it over the exposed oyster, pours out his digestive juices on his victim, then, at his leisure absorbs the digested products. One of the last chapters in this book deals with an animal the author calls "The Intelligent Octopus." The author feels that the bad name given to the octopus is unjustified because this animal not only is a harmless creature but a most interesting and intelligent one. The book is of absorbing interest to anyone fascinated by the wide variety of life revealed by an over-turned boulder on the shore or the "animals" in a rock pool. . . . *Polk's Shipyard* (Polk's Model Craft Hobbies, 314 Fifth Ave., New York 1, N. Y., 168 pages, 50c) is *the* catalogue for those interested in building ship models. Time was when only retired sailors made ship models; having lived and worked on sea vessels, the old salts built their little replicas with an overpowering exactness to the minutest detail. However, with the kits and plans available today, the landlubber can reproduce almost all types of ships from the ancient galley to the newest sleek ocean greyhound. In this book is a large assortment of our fighting ships from the early privateer to the latest aircraft carriers. The historical background of each ship is given along with the price of the model kit. Additional sections of the catalogue carry plans of ancient and unusual craft; describe accessories; and list a full assortment of tools designed especially for the model shipbuilder. Illustrations of the ships with their descriptive histories make this catalogue most interesting reading. . . . *Wings Of Our Navy* by Major C. B. Colby, CAP. (Coward-McCann Inc., New York, N. Y., 62 pages, $1.). Contains a splendid collection of naval aircraft; many types are familiar and experienced long and faithful service under fire. Some of these aircraft received little attention in spite of their exciting history. Included are newer planes whose performance figures and dimensions are necessarily unofficial estimates. This photo book presents a good cross section of the navy's air arm. . . . *Arms of Our Fighting Men* by Major C. B. Colby, CAP. (Coward-McCann Inc., New York, N. Y., 62 pages, $1.) The author has collected a select group of photographs of the tools of our fighting men, from the Colt .45 pistol up through rifles, machine guns, rocket launchers, mortars, howitzers, and fieldpieces and then to antiaircraft guns, tanks and armored cars. Grenades, flame throwers and allied weapons are also illustrated and described. After looking through this well-photographed book one cannot help realizing that these weapons, plus others which cannot be shown for obvious security reasons, help make our soldiers the best in the field of fighting men. . . . *Wings of Our Air Force* by Major C. B. Colby, CAP. (Coward-McCann Inc., New York, N. Y., 62 pages, $1.) The collection of aircraft in this book make it a companion piece to *Wings of Our Navy*. Some later types have performance figures and dimensions missing and they are posed to show minimum detail in keeping with national security. An interesting page has Consolidated's XF-92A delta wing experimental interceptor. Inside the back cover are powerplants and their power ratings (again as far as security regulations permit). The material presented is the best compiled at the price. . . . *The Young Craftsman* (Popular Mechanics Press, Chicago, Ill., 224 pages) consists of 450 projects to make and do—useful articles for the home, experiments in chemistry, furniture making and tricks in photography. Only ordinary tools (for the most part), are needed; inexpensive materials are generally used. There are projects for construction in wood, metal, plastic, leather and linoleum. Although the book indicates no special skills are required, we find some of the projects will need adult attention and assistance. But this makes for a good combination of father and son at the workbench.



All in all the book is filled with ideas most of which are practical and many of which can be turned to a profit.

It is typical of many excellent home workshop compendiums from the Popular Mechanics bookshelf.

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Everything Under Control

News, Views, Comment on Radio Control Planes, Boats, Vehicles by H. G. McEntee

■ Previously we printed the circuit for an electronic proportional pulser by Bob Trainer (9900 Georgia Ave., Silver Spring, Md.). Bob has improved the pulser to the circuit shown; this one works perfectly and is easily duplicated. While two relays are used, they are inexpensive and non-sensitive. One pot., R1, is for pulse ratio control; the other, R3, changes the pulse rate. If you don't want the latter feature, ground the arm of R1, omitting R2 and R3. Bob says this circuit is a great improvement because the coupling condensers of the tube's two sections return to the relay armatures, permitting rapid discharge. No critical relay adjustment is needed; if the supply voltage is rather high, it might be wise to use a fixed resistor in series with each relay winding to limit current through them to about 4 ma.

We have shown several ways to convert the popular Super-Aerotrol escapement to other uses—now here's another! Jack Williams (210 Filmore, Ottumwa, Iowa) wanted a husky 4-arm escapement to operate the elevators in a rather large plane. None could be purchased, so he converted the Super-Aerotrol as shown.

First he removed the wheel and bent *all* the points straight. Then he cut another wheel just like the original from 1/32" brass and assembled the two on the shaft. An extra washer was added for more clearance and the new wheel reinstalled. Then some tinkering and bending to get all the points to hit right and still maintain sufficient armature clearance. Escapement, installed in the tail of the plane, is used with a Citizen-Ship bellcrank for linkup to the elevators.

Since Jack wanted to have plenty of "wallop" for elevator moving, extra rubber was put on the escapement. His condenser-discharge scheme shown was to make certain the escapement worked as required. The relay is in "operated" position (this circuit is part of a proportional setup where continuous pulsing holds the relay as shown). When the relay opens, condenser discharges across escapement coil, giving very positive action. Next closing of relay charges condenser rapidly, after which drain on battery drops to very low value and circuit is ready to kick escapement again.

Relay is open when plane is not flying, so there's no switch needed in battery circuit.

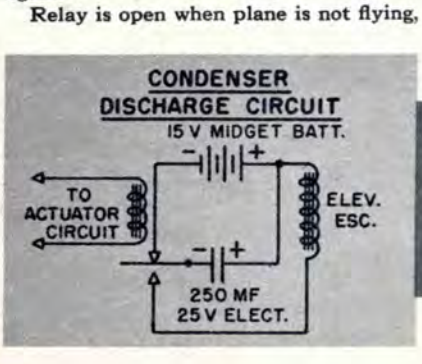
Contests and Comments. A fragmentary report on an R/C Meet held at Keesler AFB shows that Capt. Harding won, with an original six-footer, weighing 5½ lbs., and equipped with 3-reed receiver. Runner-up: George Trammell with his tiny scale Half-A Cub, using proportional.

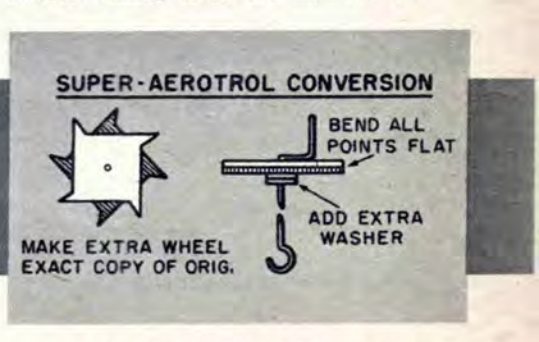
Pulse control gains converts in Pennsylvania; Ivor Winby writes that Duke Barr, Hank Weller and himself were intrigued by ATH's Trammell article and plan to try this type of control. They have been flying Live Wire Sr.'s and Kittens, and all three are using Babcock receivers. Ivor notes that as far as he can find out, there are no other R/C flyers in his area; if there are, they can reach him at 125 Dogwood Drive, Levittown, Pa.

A new branch of the BrainBusters Club of Hampton, Va. has been formed, devoted exclusively to R/C. First meeting drew 25. Feature of every meeting is "skull sessions," with a blackboard used to illustrate circuits, etc. Interested parties should contact John Worth (Box 9, Hampton, Va.).

Al Trefethen (163 Oakdale Ave., Norwood, Mass.) says that his group, the Norwood Society of Model Engineers, is making a "club project" of our Mini-Mac receiver.

Another rules problem has come up; seems some of the boys who are readying their ships for the coming season plan to include the "prototype take-off"—where the plane taxies out, stops, then engine speeds up to full power for take-off—in their stunt pattern flight. Now the rub is this: time allotted for stunt pattern is 8 minutes, and this is measured from the time the flyer lets go of his ship. In the prototype take-off, it is often necessary to do quite a bit of taxiing, a few turns on the runway, etc. You can easily use up almost a minute this way. It has been shown that most planes can't do a full stunt pattern within the 8 minutes anyway (since many stunts require a long climb back to reasonable altitude), so those who want to try the prototype take-off are *really* penalized. It has been suggested that rules be amended to start the 8 minutes timing from the moment the





ship leaves the ground. Any comment?

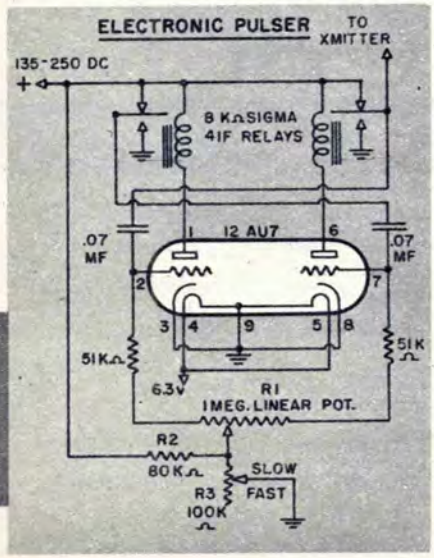
R/C Meet at Tucson, Ariz., saw: 1) Colby Evett (Los Angeles) flying shoulder-wing ship with audio selection receiver, using filters; 2) Dean Kenney (Los Angeles); 3) Bob Robbins (Tucson).

Eldon A. Reeves (Windom, Minn.) wants data on using our Mini-Mac on 50 mc.; he also wants a circuit of a simple transmitter to use on this frequency. Well, we'll soon have a story on the former; on the transmitter, why not look up circuit of the 3A5 push-pull transmitters that were so widely used on 50 mc. before 27.255 came along? We believe the old D-E Aerotrol is the only transmitter still sold for this use (by Berkeley Models). Eldon would like to hear from R/C'ers in his area; he's on 75, 40, 20 and 10 meters (W0MQO).

Great Lakes Regional R/C Meet to be held by Radio-Control Club of Detroit this summer. First event last year was big success; they hope to have 60-75 entrants in a two-day meet, (mainly as insurance against poor weather). Beautiful perpetual trophy goes to winner. A first-class field has been secured. Entrants divide into two groups—those with limited contest experience, and those who have placed in *any* R/C contest. Separate prizes for each group. Info from Ernie Kratzet (1112 Book Bldg., Detroit 26). Club has over 40 active members, with more coming all the time. Interested clubs or individuals should drop him a card so that he can keep them posted on developments.

Milwaukee Flying Electrons (2100 E. Webster Pl., Milwaukee 11, Wis.) had 31 members at last meeting; club President Vic Weissbrodt showed fiberglass R/C Buzzer'd. Al Secklin has his big Cub Cruiser in the air, equipped with 3-channel receiver. Club meets in May, June and July will follow AMA R/C rules and are open to everyone. During the winter Bill Weissbrodt (Vic's 15-year-old son) flew his Kitten on the ice; many flights were logged in near-zero weather! Two club members are building a 6-channel receiver using Hammond organ audio chokes for filters; they expect the 6' plane will weigh about 10 lbs.!

R. L. Brown advises that the R/C Buzzards of (*Continued on page 74*)



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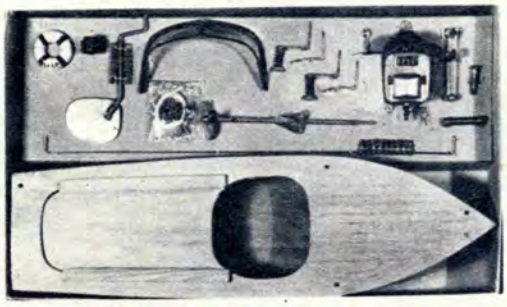

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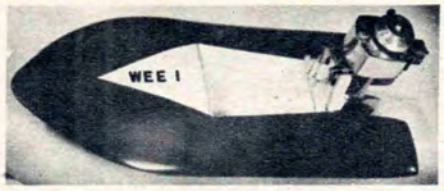

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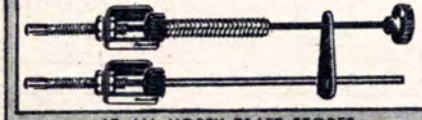

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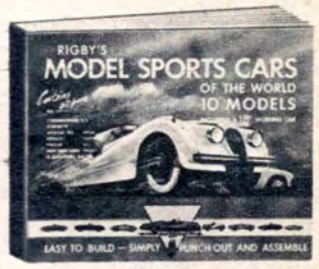
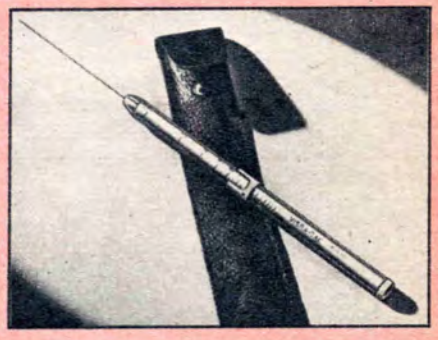


Young Sportscar Fans, and we do mean those under 10, will really get excited over Wallis Rigby's new cardboard punchout book by Doubleday. Pre-cut, scored and full-color cardboard parts for the Jaguar, MG, Cunningham, Corvette, Mercedes-Benz, Ferrari, Renault, two mini racers plus an 18" working model of the Rigby "Special" for powering with a rubber band motor. $1.50.



Pocket Tachometer is this Fower Vibra-Tak ($5). Leather carrying case supplied. A pencil-size precision "slide-rule," Vibra-Tak gives instant rpm readings from 2,000 to 15,000. Enables modeler to test any engine. Built of high stress aluminum with wire reed indicator. Tuning slide is knurled for easy use; markings are accurate. Verdell Instrument Sales, Box 212, Burbank, Calif.

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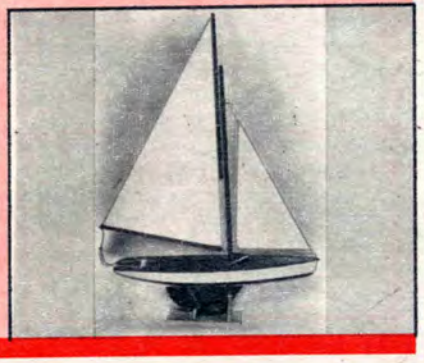

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Atwood Outboard	9.75	6.50
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Cameron .19 28	11.95	7.97
Cameron Marine .09	9.95	6.62
Elf Twin Glo	21.50	14.34
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Elf Four Ign	49.50	33.00
Fox 19	12.50	8.34
Fox 29	14.95	9.97
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Fox 59	22.50	15.00
K & B Infant .020	5.50	3.67
K & B 15	10.95	7.30
K & B 15 28	11.95	7.97
K & B G. T. 29	15.95	10.62
K & B G. T. 32	15.95	10.62
K & B 19	13.95	9.29
K & B 19 28	16.95	11.22
McCoy 9	7.95	5.30
McCoy 19 Sport	9.95	6.62
McCoy 19 R. H.	10.95	7.30

All disp. Cu. In.	LIST	LESS ⅓
McCoy 29 Sport	11.95	7.97
McCoy 29 R. H.	14.95	9.97
McCoy 60 R. H.	22.50	15.00
O.K. .049 B	4.95	3.30
O.K. Cub .099	6.95	4.64
O.K. Cub .074	5.95	3.97
O.K. Cub .19	8.95	5.97
O.K. Cub .14	8.95	5.97
Space Bug	6.95	4.64
Thermal Hopper	6.95	4.64
Veco .29 or .31	14.95	9.97
DIESEL ENGINES		
McCoy .049	5.95	3.97
McCoy .099	7.95	5.30
O. K. .075	7.50	5.00
O. K. .049	5.95	3.97
FOREIGN DIESELS		
Elfin .099	10.95	7.30
Elfin .15	11.95	7.97
Ameo 350 BB	16.95	11.27
Ameo 350 PB	14.95	9.97
GOOD USED ENGINES		
Dooling .29	14.95 Net	
O R .23	2.25 Net	
O.K. .049s	1.89 Net	
Elf Four	21.50 Net	
Dyna Jet	19.95 Net	

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A LION TAMER IN COMBAT !!!
SENSATIONAL PERFORMANCE!!!
40" SPAN CLASS B & C
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MOST BEAUTIFUL OF ALL PROFILES!!!
EASIEST IN ITS CLASS TO BUILD!!! FINEST MATERIALS!

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A Full Stunt Marvel! $1.50

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THIS IS A FREE FLIGHT MODEL

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NOW YOU CAN MAKE ONE

Easily Rises to a Height of 1,000 FEET
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Accessories that can be bought seperatly

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the champion fuels of the 1953 Nationals—won more first places than any other brands. Accept no substitutes. "100"—$.80, Ultra Glo—$.90; "1000"—$1.00 per pint.

RADIAL MOUNT

FOR .19 AND .23 ENGINES

Rear view of .19 shows mount ring installed. The three mounting holes are the same spacing as mounting bolts on .29 and .32 engines.

Price $1.00

Also available for the .15 at $.75.

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1"	$.15 each	2"	$.25 each
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Now available at your dealers, a new redesigned cut off valve for the same price—only $.75.

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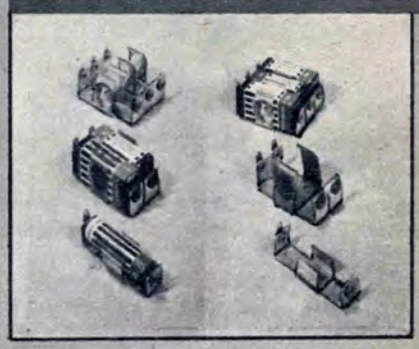
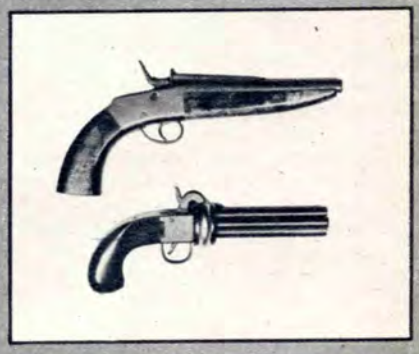
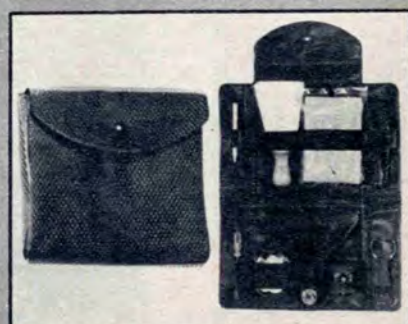


Battery Cases galore are what Acme Model Engineering, 8120 7th Ave., Brooklyn 9, N. Y. offer. Of interest to the radio control modeler are Acme's insulated cases with solder lug terminals at each end. Top set is Acme's #15 for three 22.5 V. batts such as Burgess U-15; center is #14, same as #15 for two batts; bottom is #1 to accommodate single miniature pencell.



Historic Firearm kits by Constructo Nautical Miniatures, 1186 Broadway, NYC 1, include these new additions to the line. Top is Remington Breech for $1.50, bottom is the Darling Pepper Box for $1.75. Like the other well-known Constructo gun and rifle assembly sets, not much work is needed to produce a very life-like piece that is a credit to anybody's mantel.



Father's Day follows Mother's Day, you know; here's an item to keep in mind when you're thinking of Pop. It's the Kar-Kare-Kit by Hughes Co., 529 E. 85th St., NYC 28. Included in dark blue waterproof vinyl plastic case: whisk-broom, windshield cleaning cloth, screw driver, windshield scraper, bottle opener, comb, pencil, flashlight and sewing kit. Useful items all. $2.95.

NINE NEW OUTBOARDS

Chris-Craft's 18' Outboard

Chris-Craft's 17' Outboard

Nine new outboard construction kits now available at all dealers. All an inch to the foot scale or larger. Actual large boat construction, framed hulls planked. Each kit complete with cement, decals, metal fittings, blade, sandpaper etc. Chris-Craft's 21" Monterey Cabin Express Cruiser at $3.95. Chris-Craft's 17' Speed Boat at $3.95, Chris-Craft's 18 foot Express, 18" long at $3.95. Chris-Craft's 14' Hornet runabout, 17½" model at $3.95. The new 16" "APACHE" conventional step hydroplane at $2.95. Chris-Craft's 28' Cruiser, 25' Express, 21' Sportsman, 21' Express now show outboard motor installation as well as inboard. WRITE for literature on 18 boat construction kits —$2.95 to $9.75, sixteen-inch to thirty-five inch models.

DUMAS PRODUCTS
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1944—World's largest manufacturer of power boat kits—1954

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SELF-NEUTRALIZING ESCAPEMENT

Rugged and compact, this BONNER escapement is the finest on today's market. Completely factory assembled and **adjusted.** Thousands now in use. Insist on BONNER.

Wt. - ½ oz.; ⅛" Rubber Drive; 2 volt; ⅛"x⅜" Mtg. Plate

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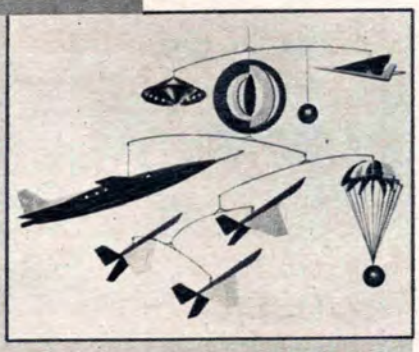
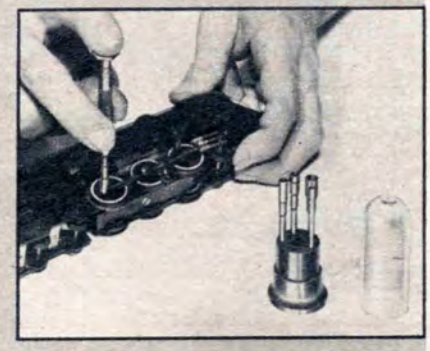
SHOWCASE

3-D Mobile Kit, the "Spacemobile" by Jon Gnagy, should delight small fry in your family. $2.95 by Arthur Brown, 2 W. 46th St., NYC 36. Everything needed to assemble a balanced mobile: Pre-printed, die-cut cardboards, foil boards, plastic balls, wires, and threads included. Sliding adjustable clips for easy balancing. Colorful shapes and forms are in constant motion.



Tiny Socket Wrench Set is handy tool. Steel handle with solid-locking chuck to hold five socket wrenches has built-in permanent type magnet enabling each wrench to hold firmly tiny nuts. BW-5 set sells for $3.95, by Moody Machine Products, Providence 5, R. I. Interchangeable socket wrenches are 5/64 hex, 3/32 hex, 7/64 hex, ⅛ hex and 5/32 hex. Plastic base holder, clear plastic cover.



Got Yours? Don't wait too long before ordering your personal copy of "Air Trails Model Annual" for 1954. Latest edition is filled with all types of models, construction hints and operating techniques. At your hobby shop, newsstand or by mail from Air Trails Model Annual, 304 East 45th St., New York 17, N. Y. 50c in U. S. and Possessions; 60c in Canada; $1 elsewhere. Order now.

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this is for you!

Sterling Piper Tri-Pacer completely pre-fab scale model with 58¾" wing span; die-cut balsa cabin sides, engine and landing gear bulkhead; metal cowling. McCoy .29 motor, 11.95 additional **10.95**

Operate your Tri-Pacer with a **Berkeley Super-Aerotrol Radio Control Unit and save $7!** Transmitter, milliammeter, escapement, receiver, whip antenna, complete instruction manual. No special license needed. Complete RC Unit, parts if purchased separately, 56.95 **49.95**

Extra dividend when you buy the Super-Aerotrol and the Tri-Pacer with Motor! You get . . . cost-free . . . a 2.25 bonus of: 1 can Glo-Fuel • 1 Prop • 1 Battery • 3' Hook-up Wire with lugs, alligator clips

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For those dream landings, try R/C Wheels. Designed for rough flying. 50 lbs. bounce safe on pair. Large volume balloon type. Pure black rubber. Heavy duty walls. One piece dural hub. Tire-stays-on Hub guarantee. Now ready: 3½" Dia. (3 oz.) Size. $3.50 per Pair, P.P.

R/C WING-STAB KITS!!

SPAN	CHORD	STAB	PRICE	P.P.
60"	10"	20¾"	3.99	.50
50"	9"	18¾"	2.99	.50
42"	9"	16¾"	1.95	.50

"It's a timely idea!" You design and make your pet fuselage without wasting time on wing and stab Ribs die-cut. Edges shaped and notched. Try a set today! Please include Postage.

5-1 R/C WINDER

Ever find yourself short winded? 1½" Dia. gear case easily fits in your pocket. $1.25 P.P. 1952 and 1953 YEAR BOOKS can help you very much. Give them a try. $1.00 each. P.P.

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Colors: R.Y.B.W. & O. 25 sheets for $2.00 postpaid.

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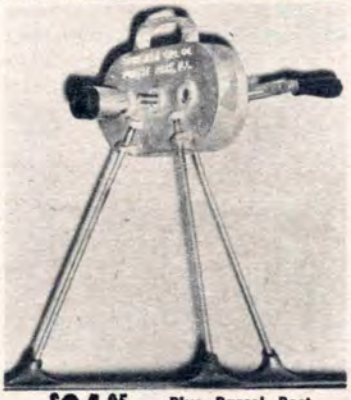

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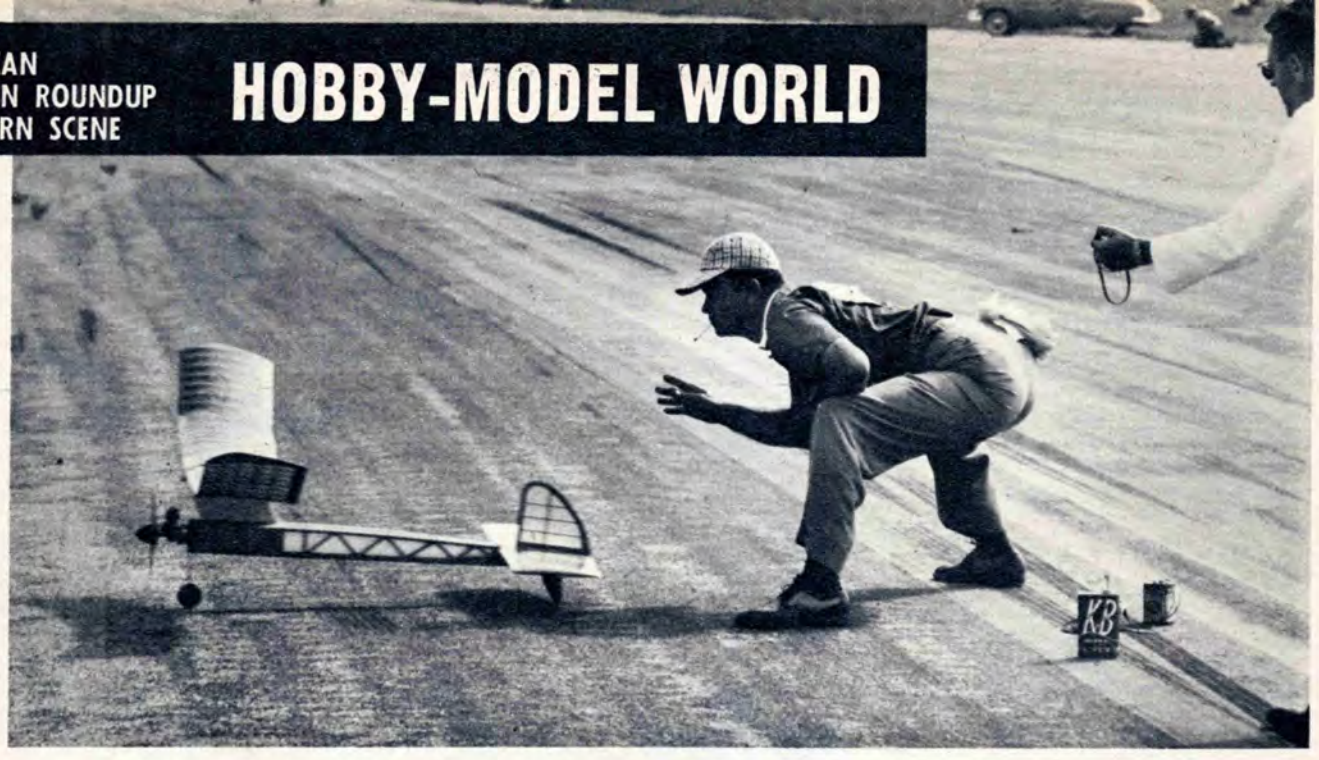
HOBBY-MODEL WORLD



Jet Fans should welcome the news that the third North American Jetex modelplane flying eliminations will be run off June 13 at Windsor, Ontario (across the river from Detroit) by the W.M.A.C. Winning planes will be shipped to England for entry-by-proxy in the international finals sponsored by Wilmont-Mansour, makers of Jetex engines and fuel.

Regulations governing the competition are wonderful—you know why? There are hardly any! No wing loading, wing area or fuselage cross-section rules . . . the only requirement is that each model be powered by a Jetex unit.

Modelplaners living more than 350 miles from Windsor may send their models for proxy flying in the eliminations. Get all the data from Gary Lucien, Windsor M.A.C., 271 Lincoln Rd.

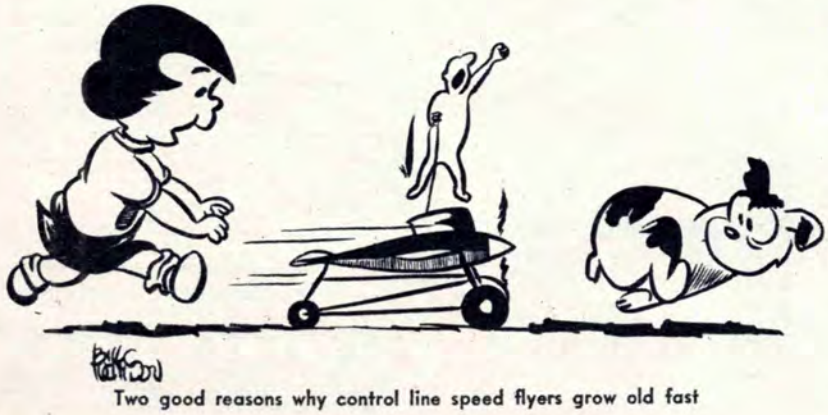
Model Car Records are furnished us by the American Miniature Racing Car Association. "Miniatures" are small models; "midgets" are smaller copies of big Indianapolis-type racers, have one passenger—the driver, and as the "real" thing they should not be confused with "miniatures" which are just models duplicating faithfully the real cars.

Still with us, or did we lose you several lines back?

Speed marks for cable cars (these are tethered to center of 1/24th mile racing circle by .050 inch diameter steel wire): Custom Proto Class—Paul C. Kruse, 150.75 mph; Modified Manufactured Proto—Robert Moore, 144.46 mph; Spur Gear—Al Winters, 144.00 mph; Custom Sportsmen—Carl W. Norward, 134.32 mph; and Manufactured Proto—Franny Wolf, 130.81 mph.

In Florida at Daytona Beach and Eustis the big mid-winter competitions produced these winners . . . Daytona, Spur Gear—Bill Thomas, 135.33 mph; Custom Proto—Ed De George, 141.28. Eustis, Spur Gear—Bill Thomas, 138.88; Custom Proto—Howard Fox, 146.30 mph. W. T. Thomas, Bill's father and World War I manufacturer of the Thomas-Morse Scout, placed 8th at Daytona Beach in the Custom Proto division with a very creditable 128.20 mph. At the Eustis battle Arne Zetterstrom of Stockholm, Sweden, astonished the boys with a good 135.13 Custom Proto entry using a non-chromed sleeve in a car of his own make and design. Arne had even cut the gears himself. This is quite a feat among the miniature racing car clan.

Main trouble with the activity is that in the very beginning it became too specialized, too restricted and just too tough to break into. Instead of encouraging the novice with an anything-goes type of special event, rules got finer and finer, requirements were refined and then re-refined. Result: the average guy just doesn't stand a chance. But we still like the AMRCA lads; they're a fine group. Dooling engines are used almost exclusively; strict dependence on just one powerplant is always bad for any sporting activity.



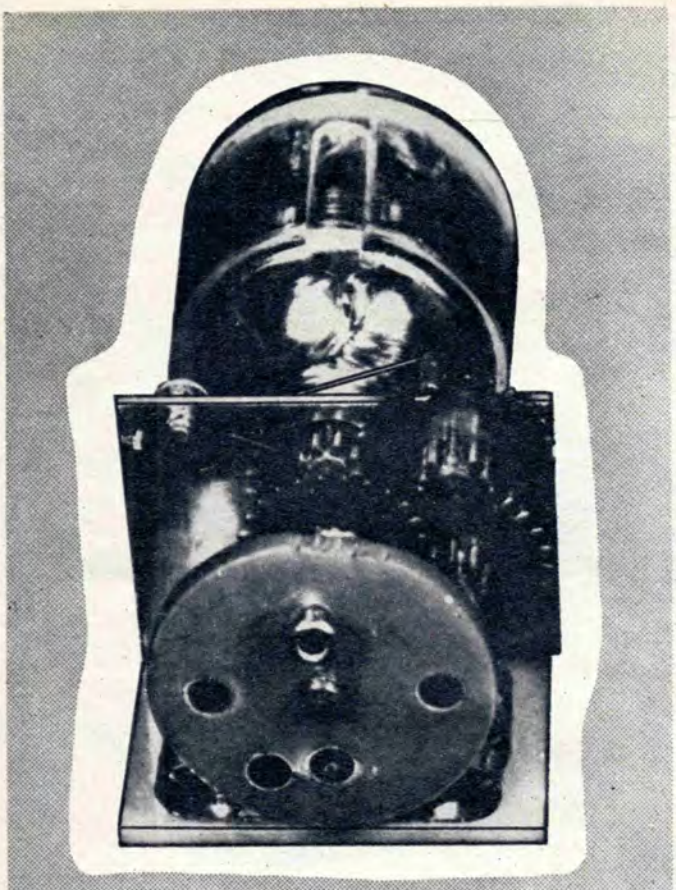
Two good reasons why control line speed flyers grow old fast

Wanted: Dooling .61's. Example of what we have just been saying is a frantic plea from the International Model Power Boat Association, 2991 Garland Ave., Detroit 14. (We're willing to be convinced otherwise, but our initial reaction is that the I.M.P.B.A. is pretty much a local club. But maybe they'll expand into something really national. We're always wary of small local groups that designate themselves as "international." As stated—we're always open for corrections.)

Like the race car boys, some of the model power boaters have come to depend exclusively on the Dooling .61 for motive power. So what happens when the manufacturer stops making your motive power? Well, you write a frantic plea to a magazine like Air Trails HOBBIES as follows: "There is a great need for new or used Dooling .61 engines and parts—especially pistons, rings, sleeves, rotary valves and flywheels. Any individual or hobby dealer having same to sell please contact us immediately."

Okay, IMPBA, hope you get your much-needed Doolings. *Now, then, how's about hearing from race car and power boat fans who have some constructive ideas on how to run sport and competition events for both types of activity where any and all engines can compete equally?*

Honest Danes. Invitation came from Royal Danish Aeroclub popularly known as the Kongelig Dansk Aeroklub (medlem af F.A.I.) for us to take in the World Championship (*Continued on page* 75)



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MULTI-SERVOS
POWERFUL-DEPENDABLE
MOTOR DRIVEN R/C ACTUATORS

Check these 10 Exclusive Features!

1. Multi-Servos provide *selective* control positions!
2. They use *any* radio, require *no special* equipment!
3. Offer *multi-controls* with simple radios!
4. Provide *more* power than can be used, over ½ lb. of torque!
5. Use the very *minimum* of batteries!
6. Give extreme battery life, 5000 operations on 2 pen cells!
7. Are fast and *positive* in action!
8. They are *lighter* in installed weight!
9. No rubber bands are used!
10. Come ready for use in *any type* model!

Multi-Servos are made in 4 different models to fit every R/C need. Choose the one or combination to do the job you want done right!

MODEL 2PN . . . $11.95
Two positions with an automatic neutral for single control operation.

MODEL 3PN . . . $14.95
Two positions with an automatic neutral, plus a 2nd servo circuit added.

MODEL 2P2N . . $11.95
Two positions with two neutrals; use with 3PN for a 2nd air control.

MODEL 3P $10.95
A three position actuator without an automatic neutral, engine control.

A product of the
deBOLT MODEL ENG. CO.

THE VERY FINEST FOR RADIO CONTROL

$6.95

THE "TRAINER" .08-15 ENG
THE WORLD'S MOST POPULAR R/C MODEL!

"LIVE WIRE"

The name that signifies the PROVEN BEST for all R/C flying.
Only with Live Wire Models do you get all of the Superior design Features!

NEW!

$14.95

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THE "SENIOR" 19-23 ENG. CUSTOM BUILT

LIVE WIRE "Cruiser" $3.95
dmeco's NEW REALISTIC RADIO CONTROL MODEL!

Typical of the Live Wire models is the Cruiser. Its well balanced design provides extremely realistic flight with low wind penetration and great weight carrying ability. Construction is simple and rugged. Exclusive is the removable R/C unit. Live Wire kits are complete with finest A1 materials, precision finished ready for assembly. Plans are full size and include instructions for building, radio installation and flying. All necessary hardware is given including R/C bellcranks and horns.

FREE FLIGHT

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THE "KITTEN" R/C

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All American Jr	All American Jr	"All American"	All American Sr
BASIC TRAINER $1.75	STUNT TRAINER $2.50	STUNT MODEL $4.95	CONTEST STUNT $5.95

Every Member of the Team features "Asymmetrical Stability", the Sensational means of obtaining a Cleaner, Lighter Model of Superior performance. All kits are completely pre-fabbed from the finest HAND PICKED materials, plans are FULL SIZE and a formed Dural Gear is included.

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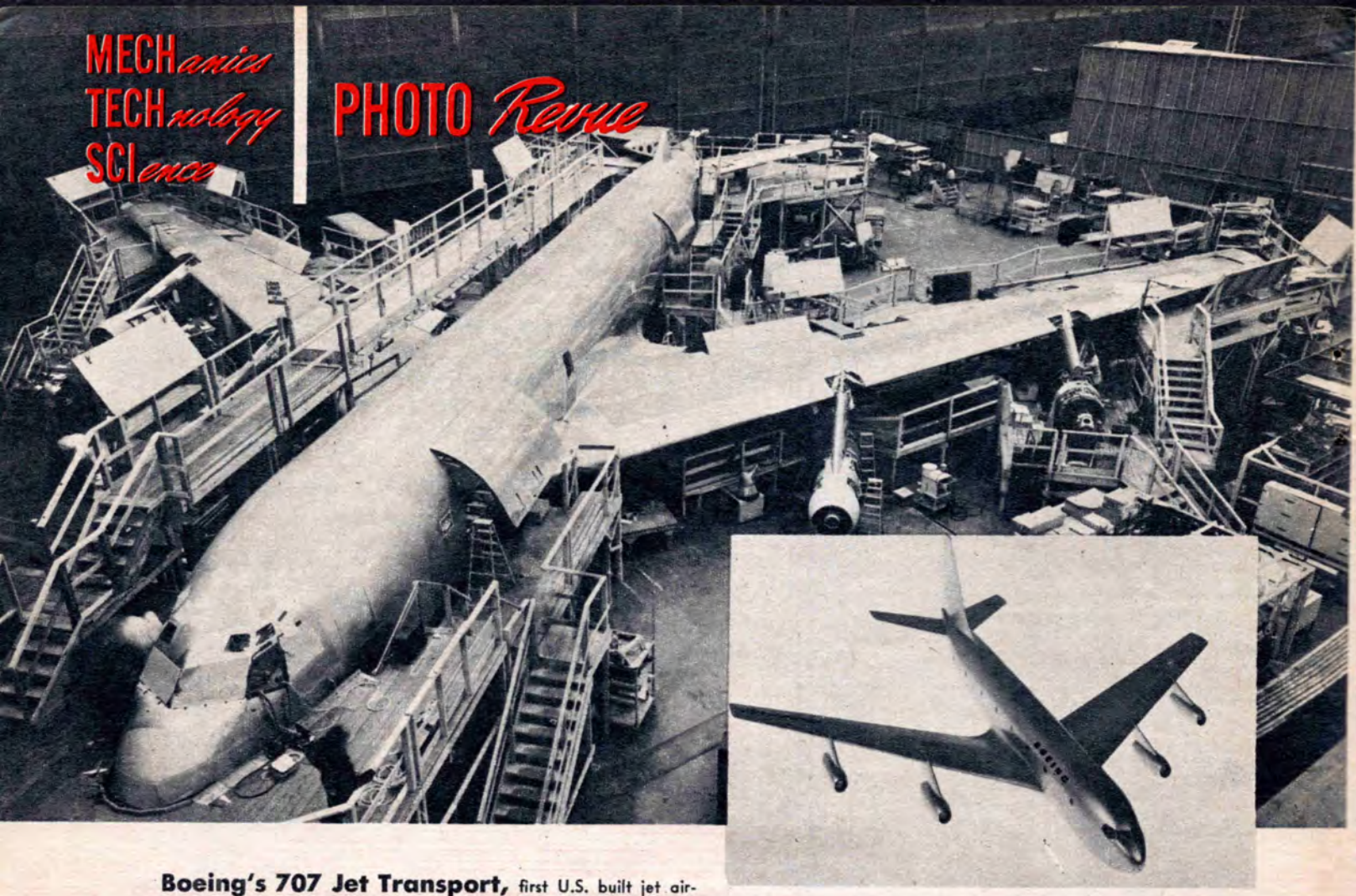
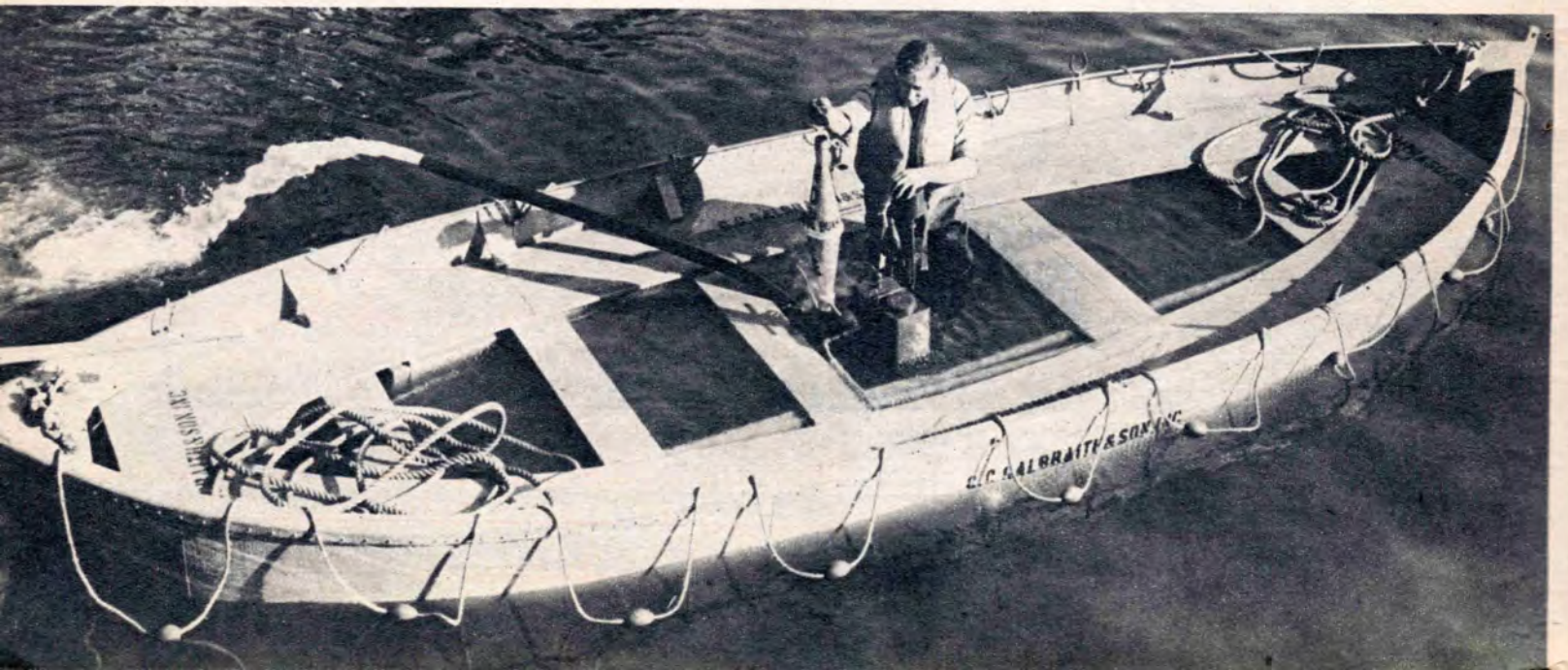
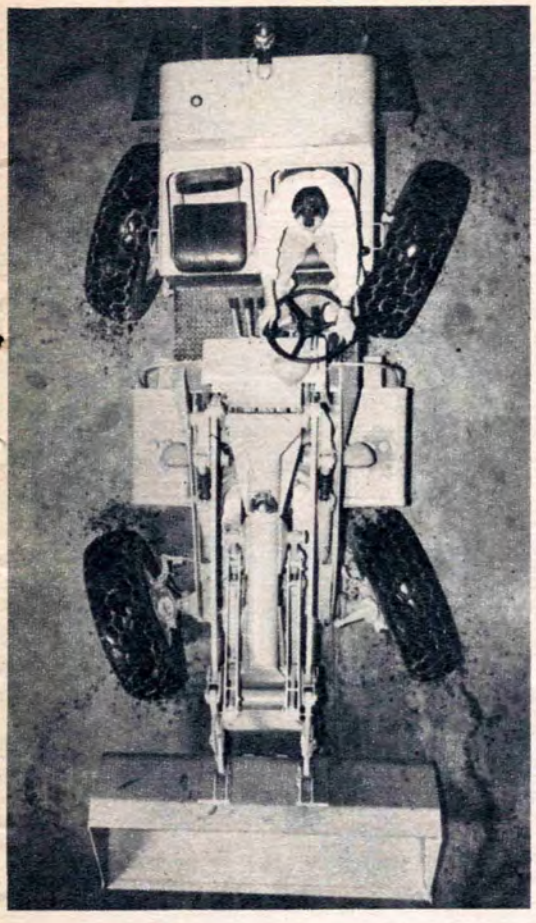
MECHanics TECHnology SCIence PHOTO Revue



Boeing's 707 Jet Transport, first U.S. built jet airliner, takes final shape at Renton, Wash., plant. Unlike its British counterpart, the Comet, the 707's four engines are mounted on external pods, an installation pioneered by Boeing, which greatly reduces fire hazard, permits a thinner wing section and facilitates maintenance. New jetliner is a big airplane: wingspan is 130 ft., fuselage is 128 ft. long. Accommodations will be for 80 to 150 passengers depending on range desired and payload requirements. Fully loaded the airplane will weigh 190,000 lbs. It will be capable of spanning the continent nonstop in 5 hours and fly from New York to London in 7 hours, cruising along at a brisk 550 mph, at 35,000 feet. Powerplants of the prototype are Pratt & Whitney J-57s, same as on the Boeing B-52 Stratofortress. Production types may be equipped with various other engines of similar or greater power. The jet represents a private investment by Boeing of $15 million, a gamble which the company believes to be justifiable in view of ever-growing air travel and demand for greater speeds. Progress in development of jet engines and high-speed aerodynamics makes such an airplane economically comparable to present-day four-engine airliners. Another factor is the urgent need for this type of aircraft in military aviation as tanker-transport. For those who visualize boarding a 707 tomorrow for a flight to London, a word of warning: Although the plane will be flying this fall, it may take up to five years before it's in service with the airlines.

Waterproof engine is something every motorboat owner dreams about. This one, a diesel made by Norse Electric Manufacturing Co., can be started and run under water! It is also a self-bailer as demonstrated in a new type lifeboat.





Around the corner in a hurry scoots the Shoveloader built by Baker-Lull Corp., Minneapolis. Has four-wheel steering based on hook-and-ladder principle. Turning radius is only 7 ft. High clearance and special tires permit operation under rugged conditions of mud and snow.

Space clock invented by Dr. I. M. Levitt of Franklin Institute and Fels Planetarium, Philadelphia, tells time by months and years on earth and Mars. Martian day is 24 hours, 37 minutes, 23 seconds long. Still in experimental stage, clock is based on astronomical calculations; may help space travelers.

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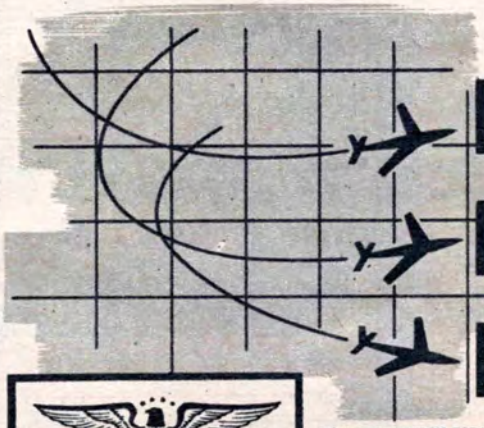

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☐ Instrument Rating

HIGH-PAY ACTION for men who want to move fast awaits Embry-Riddle trained pilots. Best instructors, up-to-date aircraft, superb year-'round flying conditions, backed by 28 yrs. experience training today's aviation leaders.

☐ A & E Mechanic
☐ A & E combined with Private Pilot
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Here are two more tricks for your "Houdini" repertoire. The gent with the match is going to pull a fast one: he'll blow out the "lucifer" while laughing up his other sleeve. The young lady on the left is a cute trick, too. She can balance a drinking straw on the end of her pert nose. . . . So what's the secret? Elementary, dear Watson. The trick with the match is to hold it between two fingers with thumbnail triggered against the bottom end of the match so it can be flipped by moving the thumbnail. An abrupt movement should be sufficient to extinguish the match while you are blowing up the sleeve of the other hand. The straw on the lady's nose is held in place and steady by a piece of chewing gum. Knead the gum until it is soft and insert it into the tube; make sure that it is well concealed inside, with just enough protruding to adhere firmly to the nose. . . . They'll never guess!

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Ever notice how there's always one personality lad in any crowd at a school talent show, college get-together, civic or service gathering? And the one guy we've always admired is the fellow who stops the show—casually —with his bag of tricks. So we're asking the readers to send in their favorite original tricks. Air Trails HOBBIES will pay $25.00 for each one illustrated here. All you have to do is furnish us with a description of your favorite feat; include rough diagrams or sketches if such are required. Send to: "There's Money in Magic" Dept., c/o Air Trails HOBBIES For Young Men, 304 East 45th St., New York 17, N. Y.

Address letters to Air Trails HOBBIES For Young Men, 304 East 45th St., New York City 17, New York

Correction on Fox .19 . . . I was interested in your write-up of the *"New Fox .23."* Look again. Bore equals .650 and stroke equals .700, so displacement equals .232. The stroke of the new Fox .19 is 0.600 in. I have had one of these engines since before Christmas 1953 and I can say that it is an excellent product.

Richard A. Brass, Peoria, Ill.

• Right! The .700 was a typographical error.

Who Fired That Shot? . . . Just saw your April issue and congratulations on a fine hobby mag. It was probably a typeset error, but I couldn't help noticing the "shuffled captions" on your page "Guns That Won the West." Sam Colt would revolve in his grave at the idea of you calling the .44 Dragoon a Colt Frontier and vice-versa, but that is just what you did. Also, the short barreled Frontier .44 you refer to as a Sheriff's model is generally known as the House or Storekeepers Colt, single-action. In the "80's," Sheriffs seemed to "tote" all sizes of barrel-lengths and Colt's would supply (at a buck an inch) any barrel length over the 7½" you wished. But you probably know that anyway. Hats off to a much needed magazine.

R. W. Bradford, Willowdale, Ont., Can.

• Thanks for your sportsmanlike forbearance. We aim to check our guns more closely hereafter.

How to Stay Young . . . I find Air Trails an indispensable aid in following the hobby of model aeronautics. Let's hope the new Air Trails HOBBIES For Young Men will place strong emphasis on construction and informative articles pertaining to aeromodeling. Though your new title may indicate a magazine edited for "Young Men" please don't forget us "Old Men" who have been through a war or two and still get a kick out of a new R/C's first flight or soloing a junior builder and his first control line job.

John E. Bahnke, Monticello, Ill.

Thank You, Lieutenant . . . ATHFYM is strictly "IT." Congratulations and good luck with your new format. Did discover an error, though, on page 9. The 27th Strategic Fighter Wing has been flying F-84G's for some time. Flew 'em from Texas to Japan via Honolulu and Midway in '52 with in-flight refueling. They are going to get F-84F's soon and I wish my old outfit the best of luck with them.

Edw. St. John, 1st Lt. USAFR, Elmont, N.Y.

Balsa Fish . . . Thought you'd like to see how your balsawood fish (pg. 107, April '54 ATH) looked on our wall. That's my daughter, Lynn 5.

John Schneider, East Meadow, N. Y.

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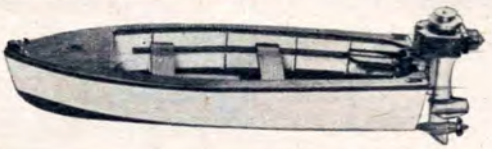

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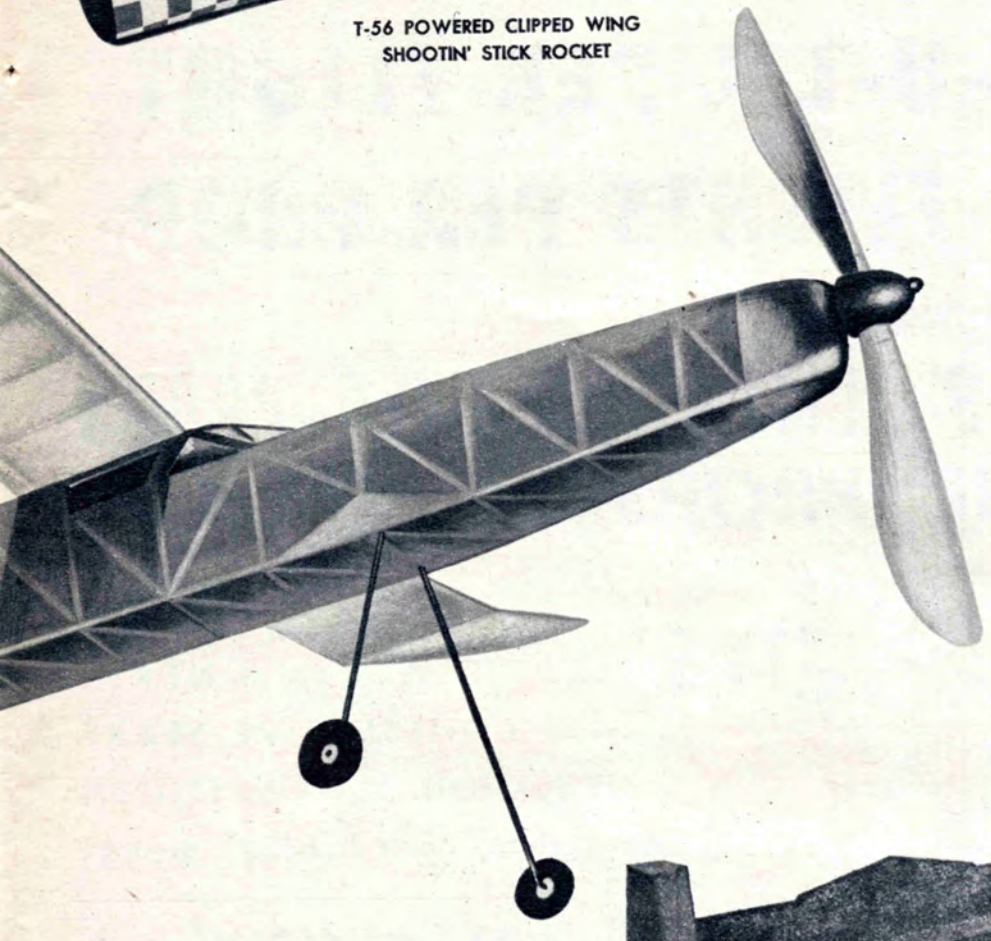

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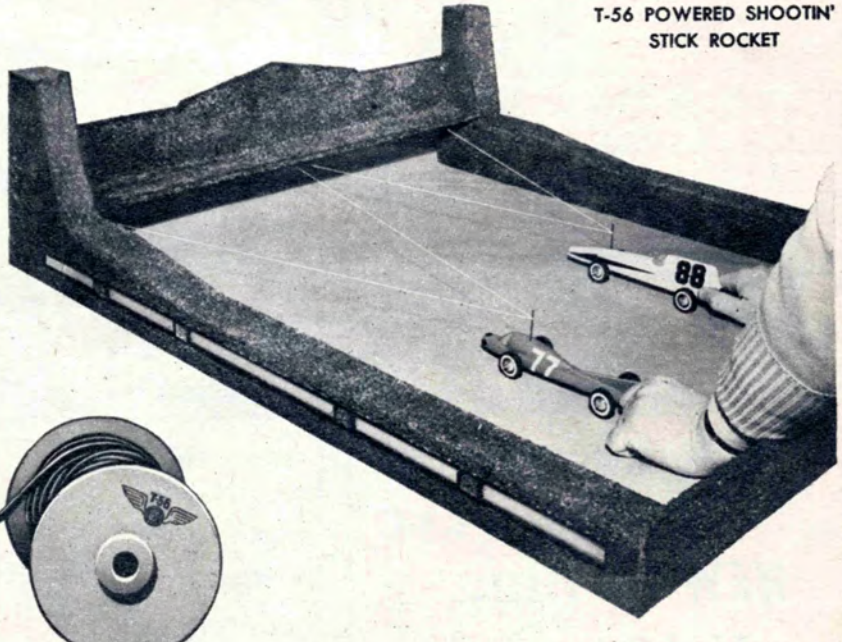

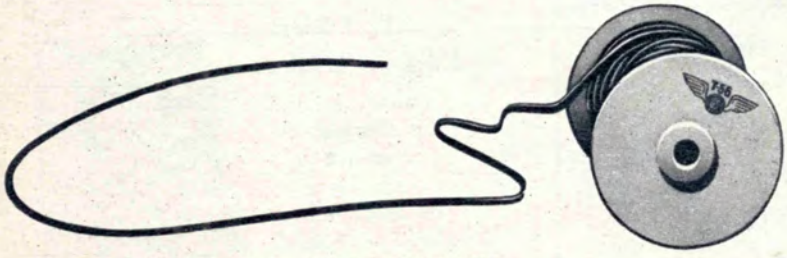

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JUNE 1954 • VOL. 42, No. 3

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Don't look now, but we've shown 6 different items on the cover and talked about 14 things—probably set a new record in doing it, too. Cal Smith did the main artwork; the car and plane will be in July issue.

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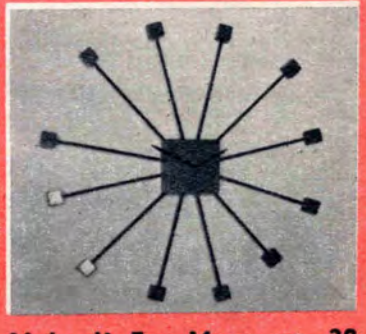

Make It For Mom: pg. 38

STREET & SMITH PUBLICATIONS, INC.

Our 99th Year—Established 1855

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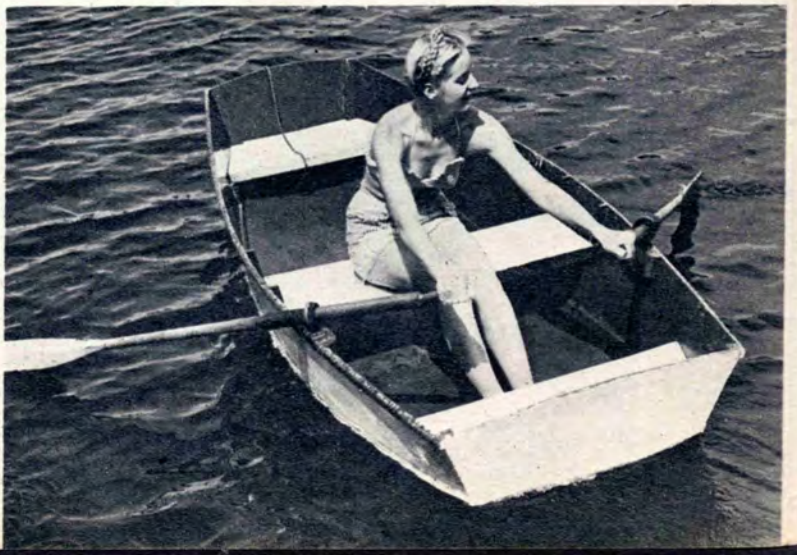
This 12 foot kit Runabout by Chris-Craft when finished weighs but 125 pounds, can be transported to the water via light trailer or auto top. It features a modified Vee bottom and beam of nearly 50 inches which make it fast and stable with oars or outboard engine. Complete kit includes a specially designed building jig which is actually a part of the shipping crate.

For those who prefer sailboats, Chris-Craft's new 12-foot Penguin sailing dinghy is suitable for competition. Kit is $230, less sail. Solid mahogany structural parts, fir-marine-plywood panels are pre-cut and pre-shaped for quick assembly. Mast and boom are spruce; mast is grooved for sail luff.

Transamerican's 12-foot skiff. This at $74 is one of the least expensive kit boats, completely open and with flat bottom. Accommodates three to four people, can be used with oars or outboard motor. Ideal for fishing or cruising around.

Smallest and cheapest kit boat is the pram. This one in plan form from Douglas Fir Plywood Asso. measures 7' 9". Strong and seaworthy, it is well suited for short-haul fishing. Conveniently small, it will still accommodate three adults.



How's your savings account? Think it can sponsor one of these prefabbed boat kits that sells for under $250? Maybe you can go partners with Dad or a friend for it's a cinch that . . .

You Can Be Your Own BOAT BUILDER

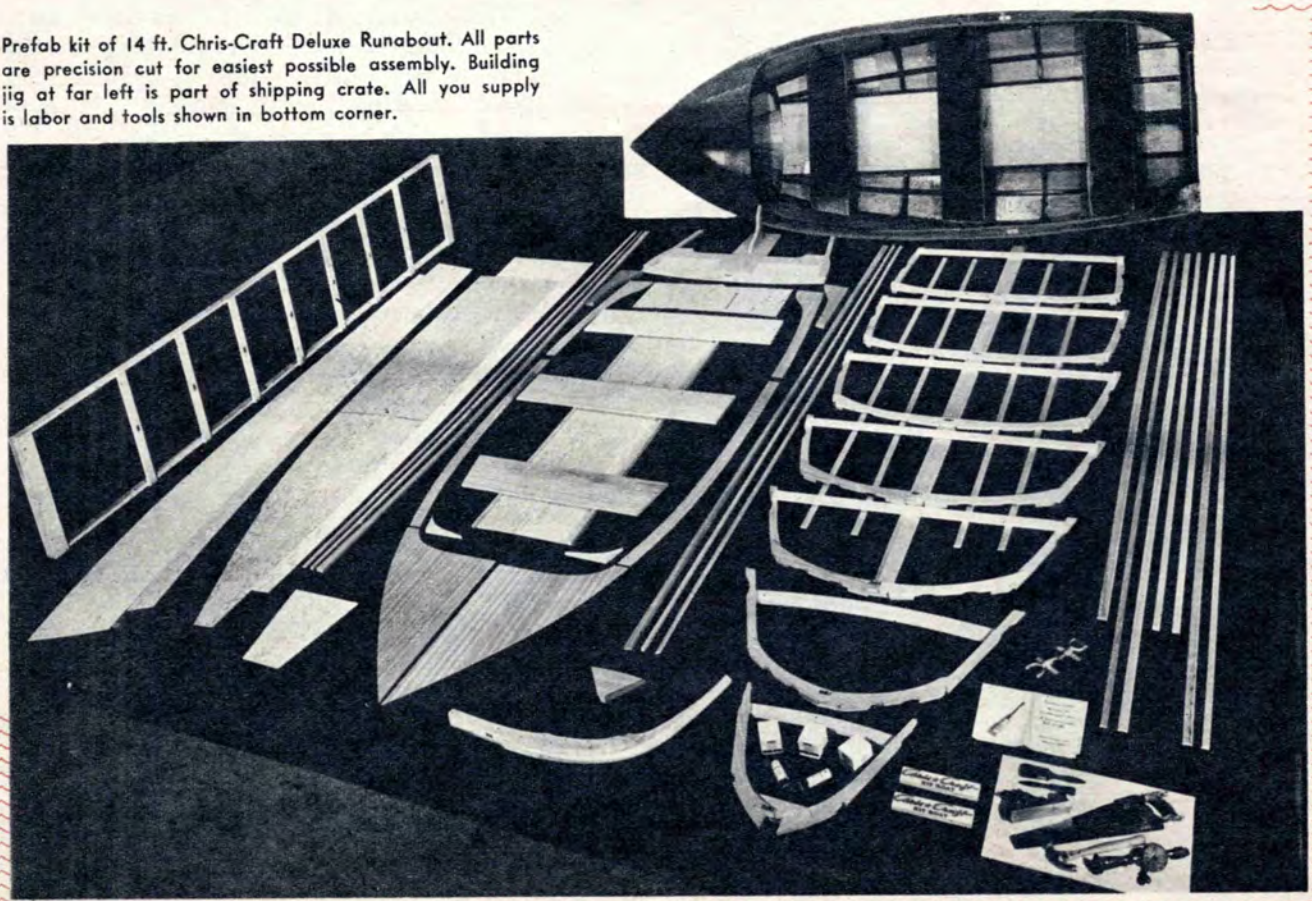
■ A rich uncle is no longer required for you to have the boat of your choice today—you can make it yourself! What's more, you can pick a boat with just the amount of work left for you to finish that you want. Naturally, the more work the maker has done, the more money you pay. If you want to get a boat the least expensive way, you'll be interested in the completely knocked-down outfits.

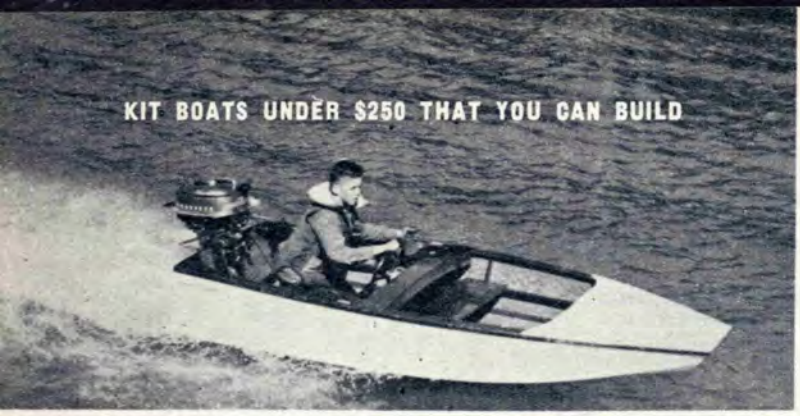
There are concerns specializing in selling boat plans only. To make a good boat from these, or from magazine plans, you have to be a really good workman, and own a good set of tools besides. If you're a novice builder you'll do better with a kit boat; if you pick a product of a reliable maker, you can be assured of good materials at a low price. The larger kit people buy in big quantities, and most of them pass some of the savings from such mass purchases on to you.

You can count on saving about half the cost of a finished boat or possibly even more, if you make yours from a kit.

Probably the largest number of kits have parts already assembled. For example, the frames are put

Prefab kit of 14 ft. Chris-Craft Deluxe Runabout. All parts are precision cut for easiest possible assembly. Building jig at far left is part of shipping crate. All you supply is labor and tools shown in bottom corner.





Ten-foot Pram (Chris-Craft) for fishing, hunting or high-speed water sports. Can be modified for sanctioned racing when you add trunk, deck, steering wheel and throttle. For AU, JU and BU Classes; reported 45 mph plus with 10 hp.

Sleek speedster is 14 foot "V-14D Atomic Outboard" by U-Mak-It. Light yet strong, it withstands extremely rough water; with or without center deck. Speed 36-40 mph on 25 hp.

Inboard engine kit by Reo converts any rowboat up to 18 ft. into a troller for less than $100. The install-it-yourself "Trollabout" powerplant is 1¾ hp, four-cycle air-cooled Reo engine which uses standard gasoline. Performance is said to equal that of a 3 hp outboard. Installation (see diagram), features a novel pulley and belt arrangement which provides for neutral, forward and reverse drives.

together, as is the transom. These parts might be difficult for the less accomplished builder to make correctly; by building them in accurate jigs, the kit manufacturer is assured that the home-built boat will have strength and its contours will be correct.

Next step up in the kit field is with a "pre-built." Needless to say, you have to pay more for such an assembly set, but you can be absolutely certain that every piece will match with every other piece.

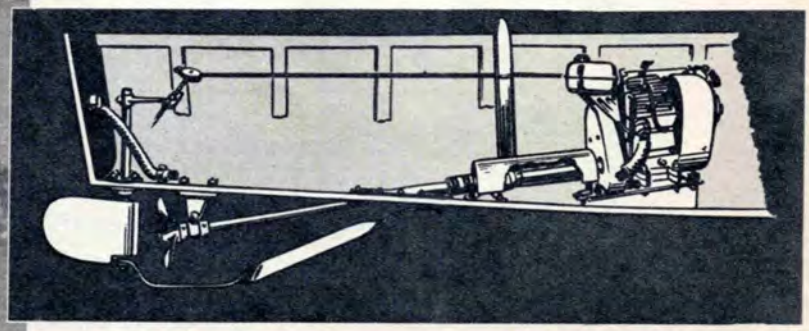
Quite a few makers offer "semi-finished" kits; the *amount* of the finishing varies. In some cases, you get a completely assembled hull, and all that remains is to put on the decking, add seats and other interior parts, and paint. A Ladd-Built 12 ft. boat kit (McConnell) of this sort costs $150; if you want it completely assembled, you pay $182.50, while the painted boat, ready for the water costs $235. Quite a saving, even if not as much as in the standard prefab kits.

The different models of the extensive Custom-Craft line come prefab form, semi-finished, or custom finished; a 14 ft. Sea-Going runabout will cost $199.95, $373.30, or $427 respectively. Sure pays to do the work yourself! This maker's semi-finished boats are completely built, though—there is no work to be done except the painting.

The variety of boats that can be built from kits is really bewildering. At the short end of the scale, there's the *pram*, a little utility boat with a pugnose—that is, the normally pointed bow has been cut off. This does not impede the boat, however, for the keel rises out of the water somewhat to the rear of the bow, so the foreshortened nose is always clear (unless you seat a heavyweight there!)

Practically every kit maker has a pram in his line, costing around $40-50; size is almost standardized at 8 ft. long. These little craft are light and easily handled; they are widely used as tenders for larger boats, and can be transported on top your car without much trouble. Prams may be fitted with very small outboard motors, but usually are not recommended for anything over 3 hp. They can also be fitted with sails, but are touchy and tricky to handle.

After the pram come *skiffs* and *rowboat* types of 10-14 ft. length, and suited to oars, or outboards. Most of these are flat bottomed; there is a wide variety of boats in this same size range, but with bottoms and other features intended for real speed with outboard motors. Many come standard, or deluxe—the latter usually having more of a deck at the bow, and possibly a deck midships, too. Boats from 14-18 ft. are usually classed as *runabouts* of various sorts, powered with either outboard or in-



board engines. Some concerns manufacture their kit boats so that either inboard or outboard motors may be fitted, with only a few minor differences between the requirements for the two types.

Above 18 ft. come the *cabin cruisers* of various sorts, and of course, it is here that you get into real money—so here we stop!

Now a word on powerplants. As discussed, most of the kit power boats are intended for outboard motors, and since such motors are fairly well known, there's no need for us to go into them here. There are many makes of inboard engines, of course, and the kit manufacturers have, in many cases, made provision for you to install either type of engine you choose. In the very small power boat class, you can get engines intended for inboard use, produced by such large-volume makers of utility engines as Lauson and Reo. The latter, in fact, puts up a kit for marine use that includes a 1¾ hp single-cylinder lightweight air-cooled engine, complete with clutch and reverse gear, prop shaft, prop and rudder—for just under $100.

Converted auto engines are popular in the more powerful installations. The little Crosley 4-cylinder engine, and the 60 hp Ford V8 are prime favorites; kits are sold to convert these and other auto engines into very satisfactory marine power plants.

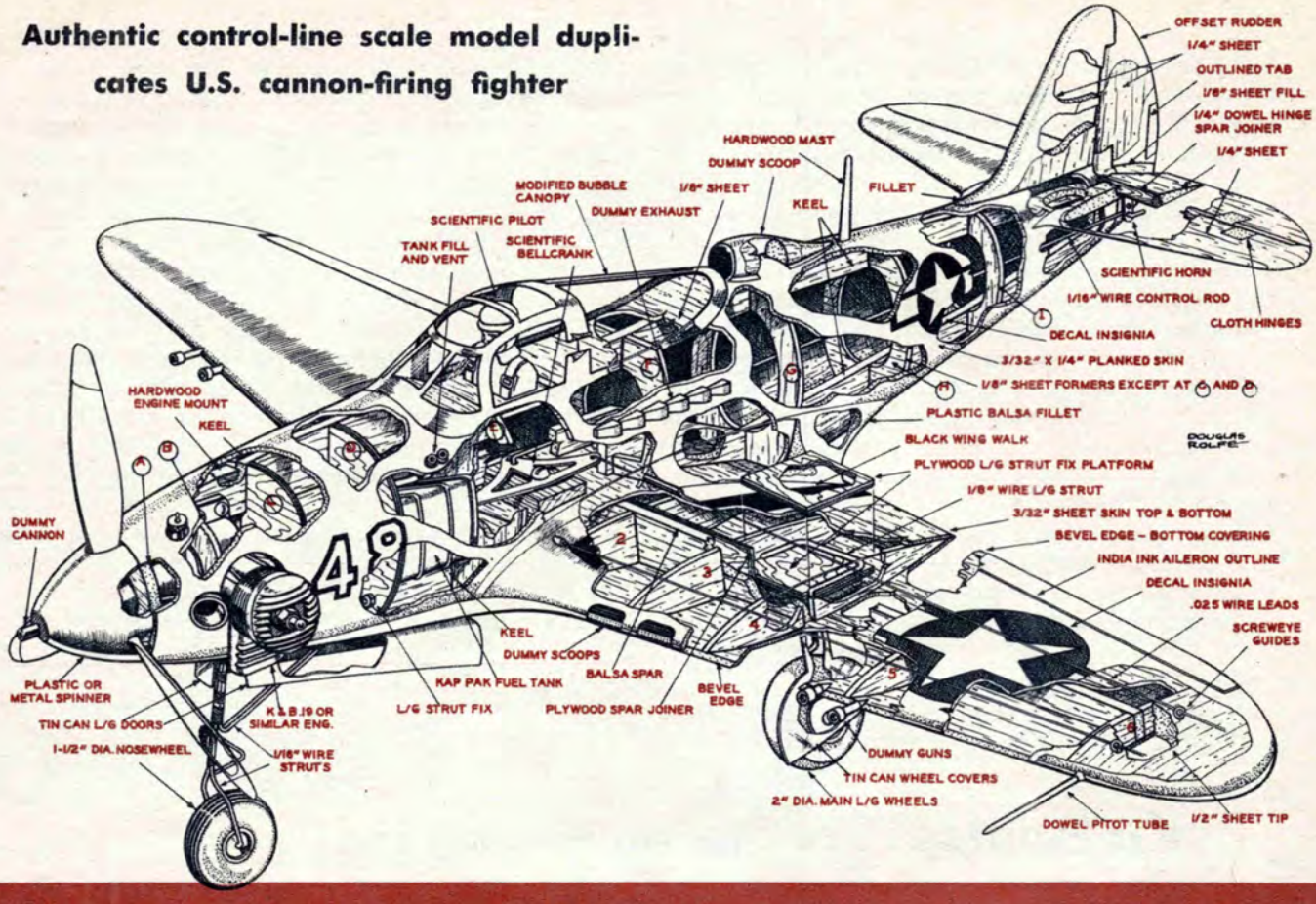
There is nowhere near as large an assortment of kit boats in the sailing class as among those intended for power. However, several makers specialize in sailboats, and some of the other kit firms provide either a sailboat design or a conversion to transform one of their other small craft into a sailer.

Our chart covers some of the lower cost kit boats now on the market. This is only a sampling of the field. Since boat kits are rather heavy and bulky, shipping charges on them are considerable. Kit boat makers are located in all parts of the country—and not only at shore points—so it is wise to look over the field of kit suppliers and try to select a satisfactory one located near you to save on shipping.

Kit Boats..... THAT SELL FOR UNDER $250

MAKER AND ADDRESS	BOAT NAME OR NUMBER	LENGTH	SPEED WITH WHAT POWER	REMARKS	KIT PRICE
Acme Boat Co. Miamisburg Ohio	Rowboat	14′	—	Flat bottom style with 3 seats. Hull is ⅜″ marine plywood.	$125
	Sea-Mate 12SM	11′8″	—	Holds 4 persons. Has forward deck. Uses outboard power.	185
	Type A Racer Model AR	10′2″	43 mph with A motors	Weighs 115 lbs. ¼″ ply bottom; forward and center deck.	95
Bay State Boat Co. Cambridge Mass.	Vee-Pram	8′	—	Galvanized screws, glue, included. Has three seats.	37.95
	Car Carry	12′	Up to 7.5 hp	Weighs 115 lbs. Designed to carry atop car. Monel nails.	79.50
	Challenger	12′	3-16 hp	Vee-bottom type designed for speed. Monel nails.	119.50
Chris-Craft Corp. Algonac Mich.	Racing Pram	10′	—	With added trunk deck, meets APBA Class JU, AU, BU specs.	97
	Penguin Sailing Dinghy	12′	—	Approved by Penguin Class Dinghy Assoc. Carries 72 sq. ft. sail.	230, less sail
	Hornet	13′4″	40 mph with 25 hp	Front and rear decks, two cockpits.	232
Custom Craft Industries Buffalo N. Y.	Packette	10′	—	For rowing, sail, or small outboard. Sailing kit, sail $69 extra.	74.95
	Jet Racer	10′	40 plus with 20 hp	Will give 20 mph with 5 hp. Amidships beam 55″.	129.50
	Sea Going Utility	16′	40 mph with 50 hp	Has large forward deck. Good performance with 7½ hp.	249
General Marine St. Joseph Mo.	Speedliner Deluxe KB9	9′	23-28 mph with 5 hp	Two seats and narrow center deck. Long front deck.	98.50
	Speedliner Standard KB12	12′	Up to 22 hp	Good for rowing or outboard. Short forward deck.	118
	Speedliner Deluxe KB14	14′	Up to 333 hp	Long forward deck, and 21″ center deck.	169
McConnell Marine Enterprises Los Altos Calif. (Ladd-Built boats)	Resort Rowboat	13′2″	—	Heavy duty type. Weighs 280 lbs.	—
	Flying Fisherman	11′6″	—	Comes with hull all assembled. You add deck, seats, etc.	150
	Marlin	13′4″	—	As above. 29″ forward deck. Can be had with small shelter cabin.	210
Ozarka, Inc. Woodstock Ill.	Model 50 Duckboat	11′7″	—	Double-ender style. Weighs only 75 lbs.	64.63
	Seneca 14F	13′7″	—	Utility rowboat for oars or outboard power.	87.45
	Ozarka 14C	13′6″	Up to 25 hp	Long forward & center deck. Modified V bottom. Windshield inc.	240.45
Transamerican Construction Corp. Smithtown N. Y.	Pram	8′	10 mph with 3 hp	Mahogany seats and framing. Monel or Everdur fastenings.	44
	Skiff	11′6½″	18 mph with 10 hp	As above.	74
	Deluxe Runabout	14′	35 mph with 25 hp	Can use as little as 5 hp. Material as above.	188

Authentic control-line scale model duplicates U.S. cannon-firing fighter



BELL'S FAMOUS WORLD WAR II TANK-BUSTING

P-39 Airacobra

By WALTER A. MUSCIANO

■ One of the cleanest-looking fighters of World War II, the Bell Airacobra was considered an aerodynamic streamline marvel with a design far ahead of its time. Originally evolved in 1938 as a high-altitude cannon fighter, the 6204-lb. XP-39 attained close to 400 mph and was powered by the then-new 1,150 hp Allison engine. By the time leakproof tanks, armor, wing guns and other miscellaneous items were added, and due to certain deficiencies in the new powerplant, the high altitude fighter became a deadly 8500-lb. tank buster that was used with success against Axis armor.

Because of the fact that an aerial rapid-fire cannon was to be fired through the propeller hub, the engineers decided to mount the engine behind the pilot in order to provide the necessary space in the nose. This also aided maneuverabilty by centering the massive engine weight near the CG. The engine location moved the wing back and the pilot forward, thereby creating magnificent visibility.

Over 9000 Airacobra fighters were built. These ranged in designation from the XP-39 of 1938 to the P-39Q of 1944. Variations existed in armament which could consist of either a 20-mm or 37-mm cannon in the nose plus two .50 caliber machine guns in the upper cowl. Wing guns varied from two .30 cal. or .50 cal. machine guns in each wing to one 20-mm cannon slung under each wing. Numerous P-39 fighters saw service with the Royal Air Force. About 5000 P-39N and P-39Q models were delivered to Russia and were considered among the finest fighting planes on the Eastern Front.

Virtually any glow plug or diesel engine of from .14 to .29 cubic inch displacement can power this ¾" to the foot scale control line replica. Since the majority of Airacobra fighters mounted three-bladed

If it were not for Walt in the left corner, you'd think that was a real "39" taking off.

propellers, we duplicated this feature; however, the late models used a four-bladed propeller, so take your choice. The model can be flown successfully on either scale type propeller and, what is more important, broken propellers and nose-overs are avoided because of the tricycle landing gears.

Construction can begin with the wing. Cut the plywood joiner to shape in one piece and taper the wing spar as the plans indicate. Firmly cement the two spar halves to the joiner, thereby automatically forming the correct amount of dihedral. Trace the wing ribs onto rather hard sheet balsa and cut to the required shape. These are now cemented to the spar assembly.

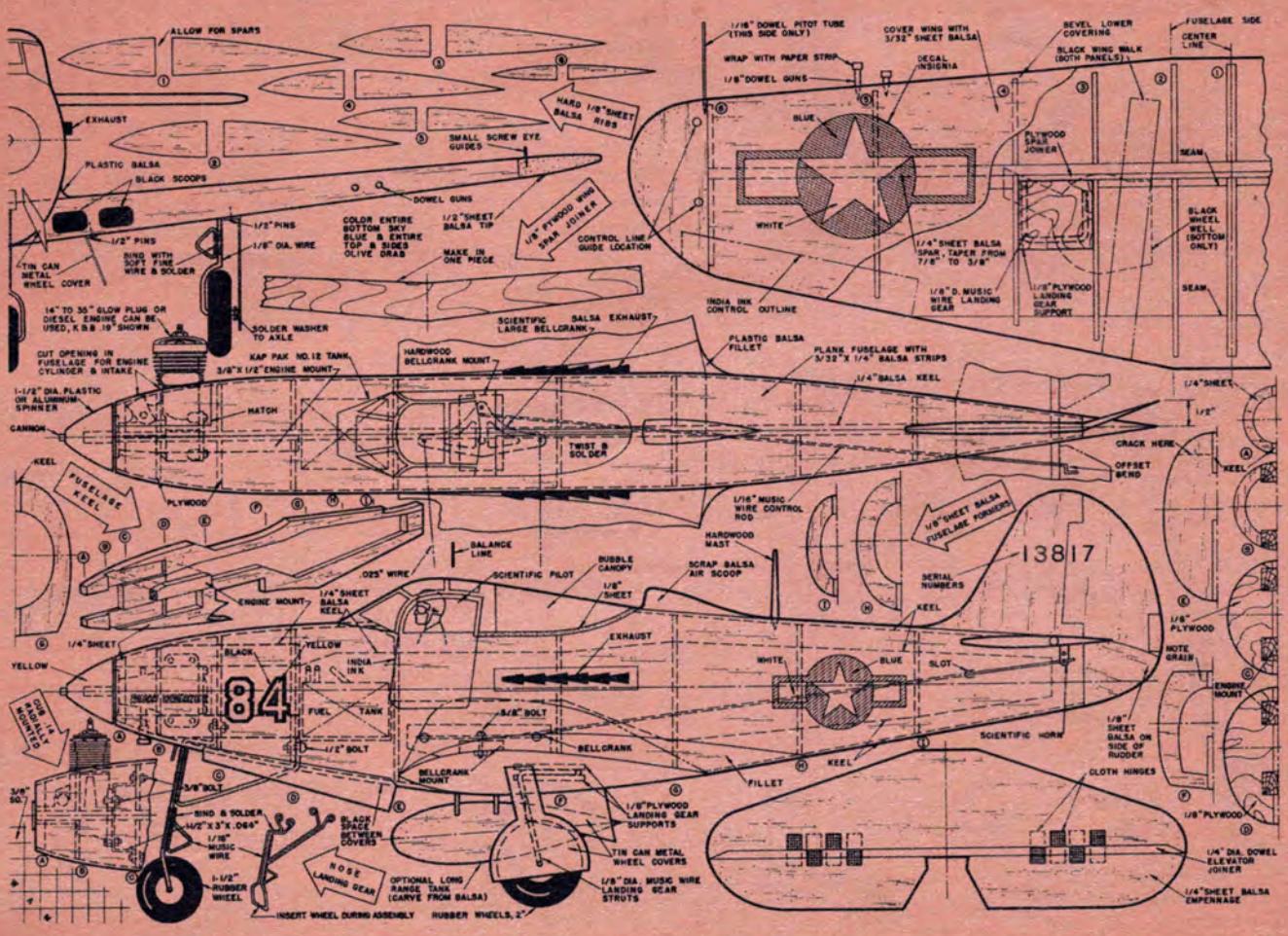
While this is drying the wing covering is cut to outline shape. It will be necessary to butt cement balsa sheets together in order to obtain the correct chord width. This should be done before the covering is cut to shape. Mark off the spar location on the lower covering and cement this to the underside of the spar. Hold in place with pins until dry. Apply cement to the underside of the ribs now and also hold the covering to them with pins until dry.

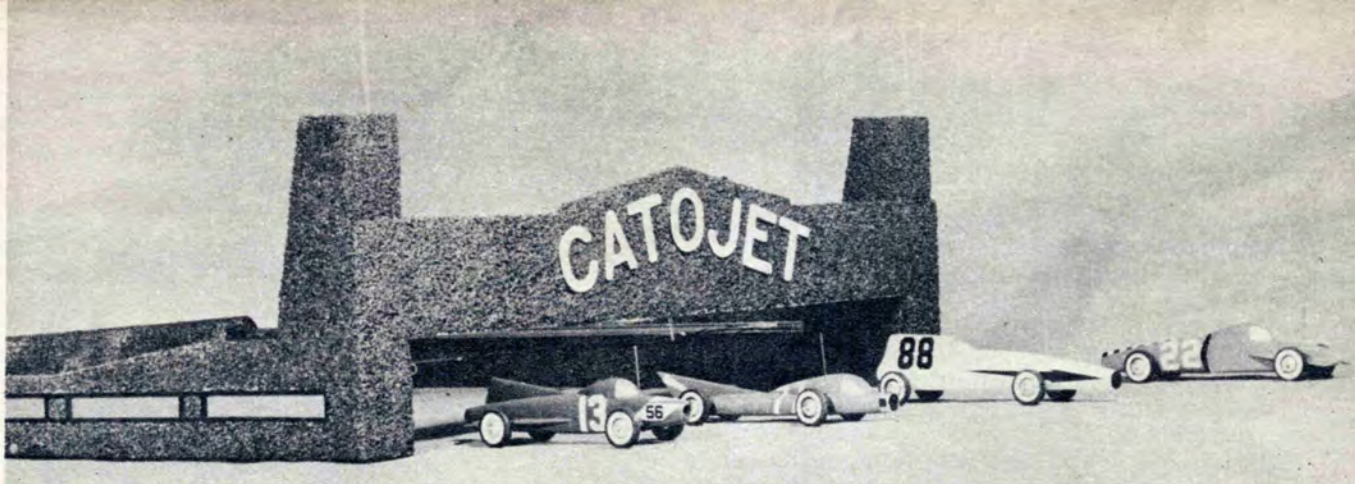
Bend the main landing gear struts to shape. These should be then sandwiched between 1/8" plywood supports, using plenty of cement. When this is dry the wire strut can be pushed through the lower covering, axle first from the top, and the plywood supports firmly cemented to the covering, ribs and spar. Apply several coats of cement to this installation.

Full construction details are available on the full-size plans.

Full-size plans for the Airacobra are included in Group Plan #654 by Hobby Helpers, 770 Hunts Point Ave., New York 59, N. Y., (50¢) with data.

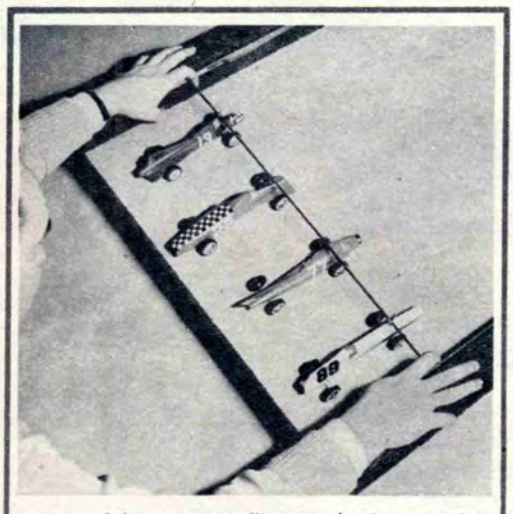
Three-quarter front and rear views of the Airacobra show sleek finish possible with this model.



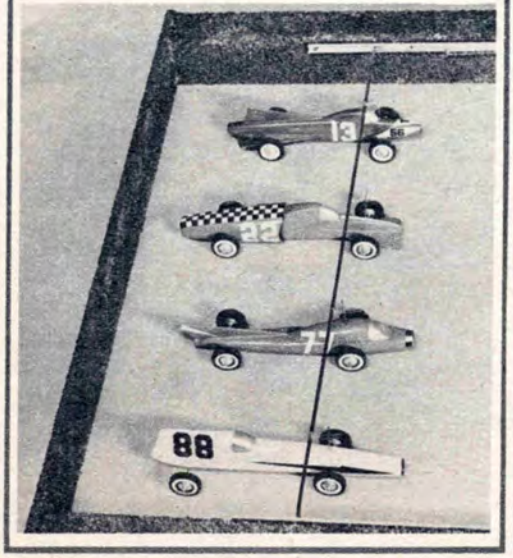


You Can Race Shelf-Scale Autos!

Catojet Racerdrome



More elaborate propelling mechanism permits 4 cars to race at once! Starting wire connects to sliders in curtain guides at each side. These are pulled forward on 2 x 2½'s by rubber bands.

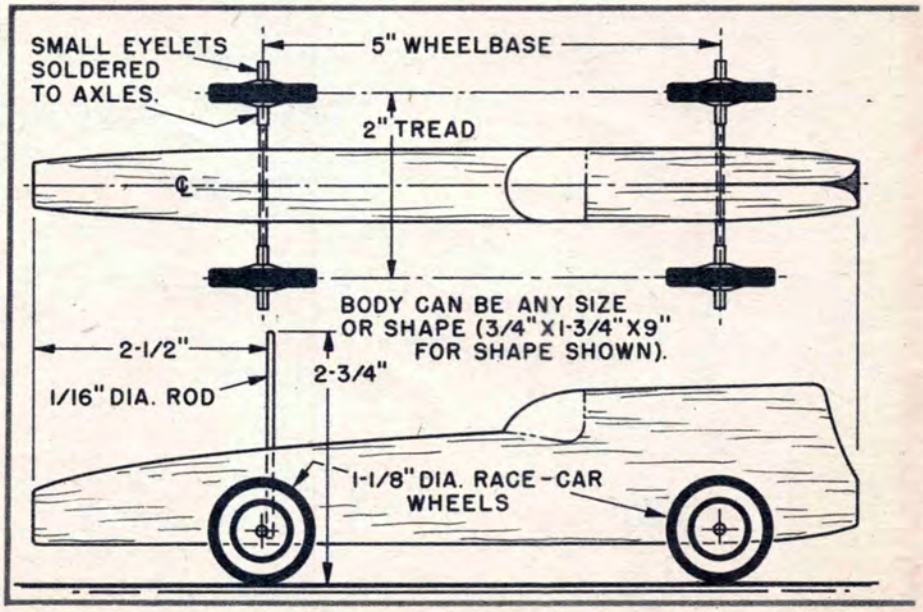


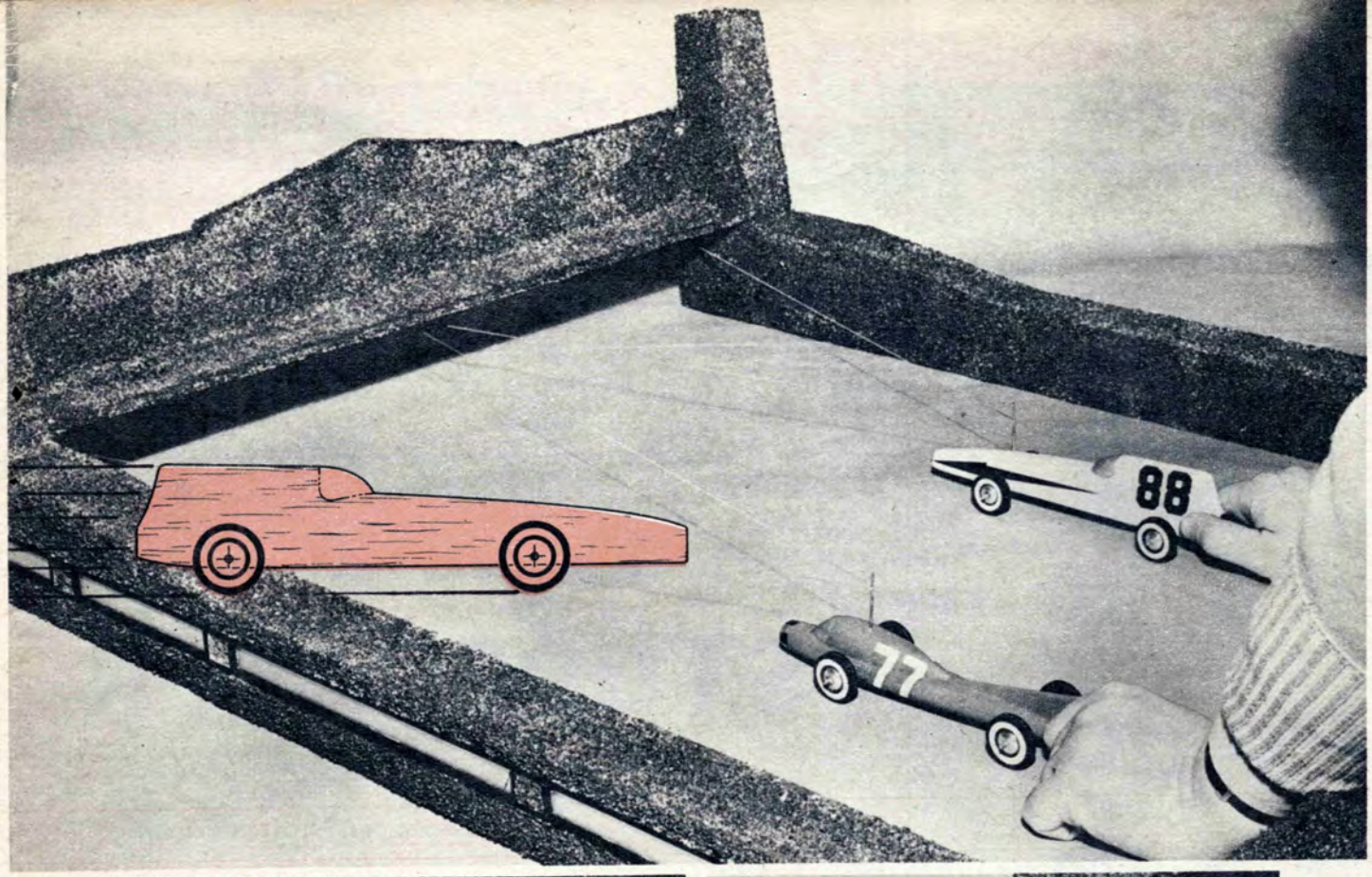
Get out the T-56, men, there's plenty of force in rubber strands to power model cars

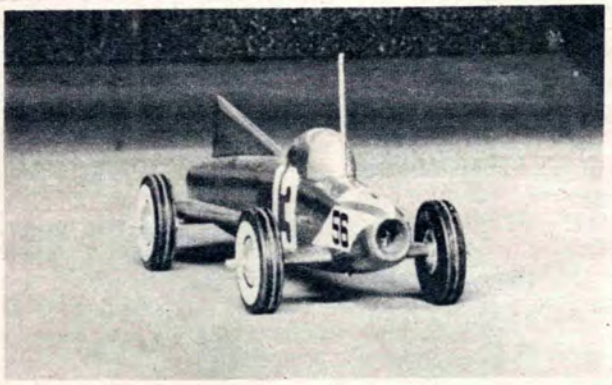
■ Think of all those miniature plastic and balsawood race cars we've been putting up on the mantle! Get 'em down, fix the wheels to turn freely, add a starting wire (1/16" dia. rod) at standard distance from nose, apply weight under the cars if needed to keep 'em on the ground—and we're off to the races! Of course, you'll need a Catojet Racerdrome, but that's only an evening's work.

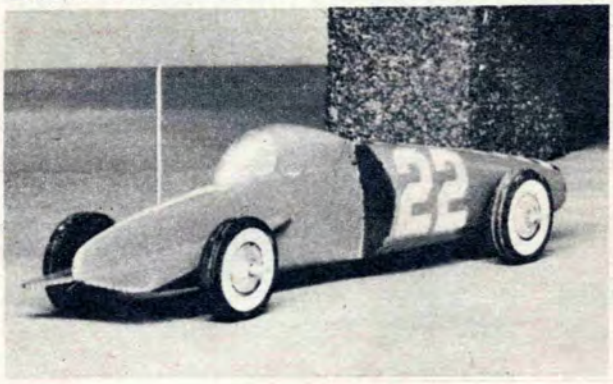
As far as fun and excitement are concerned—well, we hardly survived our last race. You see, we'd gotten through the pre-race warm-up heats nicely, then won in our quarter and semi-finals, when we found our car (good old #77) pitted against that speedy #88. Well, sir, Frank had been busy working over his car, got the wheels all nicely lubricated and looked mighty confident. So we line up for the starting signal . . . . hey, where you goin'?

Oh, going to build yourself a Racerdrome. Good!



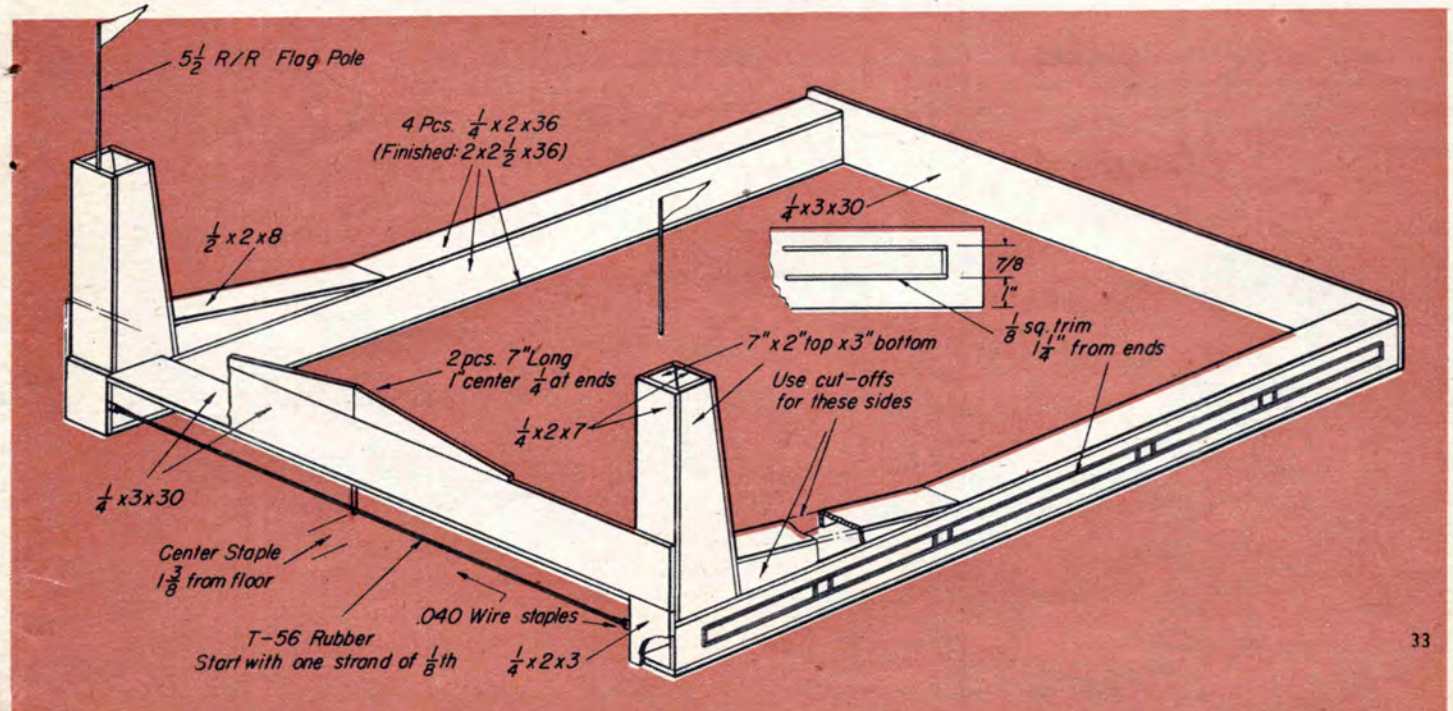




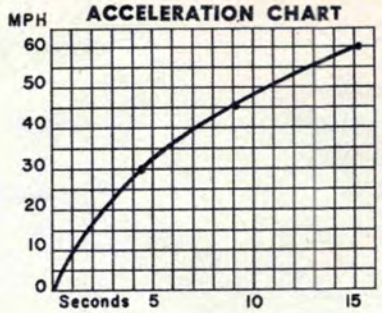


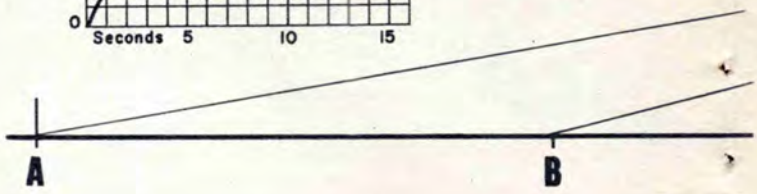
Here are a couple of suggestions for Catojet racers. Only requirement: nose lengths forward of upright rod must be the same or long-nose entry has advantage.

Can you dream up some better designs for your racers? Let's see them. Wheels should be similar for equality's sake. Those here are Kap-Pak 1⅛" dia.


5½ R/R Flag Pole
4 Pcs. ¼ x 2 x 36
(Finished: 2 x 2½ x 36)
½ x 2 x 8
¼ x 3 x 30
7/8
1"
⅛ sq. trim
1¼" from ends
7" x 2" top x 3" bottom
Use cut-offs
for these sides
2 pcs. 7" Long
1" center ¼ at ends
¼ x 2 x 7
¼ x 3 x 30
Center Staple
1⅜ from floor
T-56 Rubber
Start with one strand of ⅛th
.040 Wire staples
¼ x 2 x 3

An "ATH" Photo Road Report





By BETTYE and JOE WHERRY

STUDEBAKER

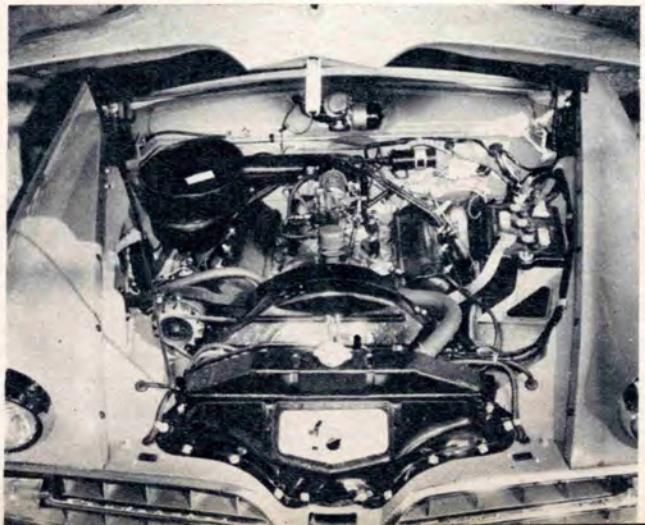
Three-quarter front and rear views show off car's pleasing lines. New grille teeth are major change on '54. Wide doors permit easy access to front seat which accommodates three; seat folds forward to admit passengers to rear. Car holds six.

■ Renewed popularity of station wagons as both family car and light service vehicle gets an added boost with the Raymond Loewy-designed "Conestoga." This job is definitely worthy of the attention of those needing plenty of room for six people plus more baggage space than afforded by the average sedan.

We were impressed by the improved fitting of body parts work on the '54 Studebaker line. We ran the V-8; found it spirited, capable of good roadability, but somewhat unwieldy in tight spaces due to a high 5¾ turns lock-to-lock on the steering wheel. Cornering hard at a good 30 mph, the lateral roll was merely 6½ degrees and tire squeal slight. Only the excessive winding of the steering wheel impairs the maneuverability of this otherwise excellent-handling car. Acceleration: 0-30 mph, 4.4 seconds; 0-45, 9.2 sec.; 0-60, 15.2 sec. Speedometer error: at true 60 mph, read 63. Braking distance: at 30 mph, 38 feet; at 60, 149 ft.

Personally, we like the wheelbase and length; the former is the same as for all other body styles except for the 120½" coupés (these so-called sports models are too long in wheelbase for even semi-sports (*Continued on page* 73)

Overhead valve V-8 is fairly accessible in its compartment and easy to work on. Engine first appeared in 1952 and has since overcome growing pains. Only '54 change is increased compression ratio. Hood ornament is just for looks. Studebaker, one of the oldest (103 years) vehicle manufacturers in U.S., started with famous Conestoga wagons which carried settlers across Western plains.



Rear luggage space has 64 cubic feet when rear seat is folded; floor length then is 89", height is 37½", width 55". With rear seat in normal "up" position, a bit over 31 cubic feet are available, floor length then is 46½". Lowering tail gate extends loading length extra 10". Spare tire and tools are fitted below rear floor board. This is raised easily and hooked in "open" position. Counterbalanced overhead door won't slam down. Exhaust pipe is extended and offset for safety and to cut down on body and bumper discoloration.

Forward visibility is better than average. Minimum vision from 5'8" driver's position is 20'10" (A-C). Through fenders an excellent 12'4" (B-C). Front fenders easily seen.

C

Test car provided by F. L. Mills Co., Bridgeport, Conn., Studebaker dealer

V-8 Conestoga

BODY & CHASSIS SPECIFICATIONS

	Commander	Champion
Wheelbase*	116.5	same
Tread: front; rear	56.5; 55.5	same
Length overall**	195.63	same
Width overall***	69.75	same
Height overall (loaded)****	62.38	same
Ground clearance (min.)	6.92	same
Turning circle dia.*****	39.5 ft.	same
Steer. wheel lock-to-lock (*)	5¾ turns	same
Tire size (**)	7.10 x 15	6.70 x 15
Weight (curb) car tested (***)	3521 lbs.	
Steering ratio	16.5 or 18.5 to 1 opt.	same
Power to weight ratio (****)	29.34 lbs./hp. (See Engine specs. for hp.)	

*Coupe and Land Cruiser (Commander only) models: 120.5 in.
**Sedans: 198 63; Coupes: 202.22; Land Cruiser: 202.63 in.
***Sedans and Land Cruiser: 69.5; Coupes: 71.0 in.
****Sedans and Land Cruiser: 60.0; Coupes: 56.31 in.
*****Coupes and Land Cruiser: about 41.5 feet diameter turning circle.
(*) Power Steering ($135 additional) reduces this to about 3½ turns lock-to-lock.
(**) Champion models other than Conestoga station wagon are fitted with 6.40 x 15 tires.
(***) Car tested was equipped with standard transmission with overdrive, turn signals, heater (no other equipment).
(****) Curb weight of car tested divided by maximum horsepower; a fairly good key to overall acceleration and performance.
NOTE: All dimensions are in inches unless otherwise specified.

ENGINE SPECIFICATIONS

	Commander V-8	Champion
Cyls., valve set-up	8, Overhead V	6, L-Head
Bore and stroke	3.375/3.25	3.0/4.0
Displacement	232.6 cu. in.	169.6 cu. in.
Compression ratio	7.5 to 1	7.5 to 1
Power output (max.)	120 at 4000 rpm	85 at 4000 rpm
Piston speed at max. rated rpm	2166.6 ft./min.	2666.6 ft./min.
Carburetor	1 dual barrel downdraft	1 single barrel downdraft
Transmission	Standard (manual) Standard (w. overdrive) Automatic	Same
Rear axle	Hotchkiss, Hypoid gears	Same
	Standard: 4.09 or 4.27 to 1 optional Overdrive: same Automatic: 3.54 to 1	Standard: 4.10 or 4.56 to 1 optional Overdrive: same Automatic: 3.54 or 4.10 to 1

Although test car did not have power brakes, only slight pedal pressure was required to bring it to dead stop in 38 ft. at 30 mph. Nose-dive during panic-stop only 2 degrees downward pitch. That 6½-degree cornering angle of roll (upper left) was at 30 mph.

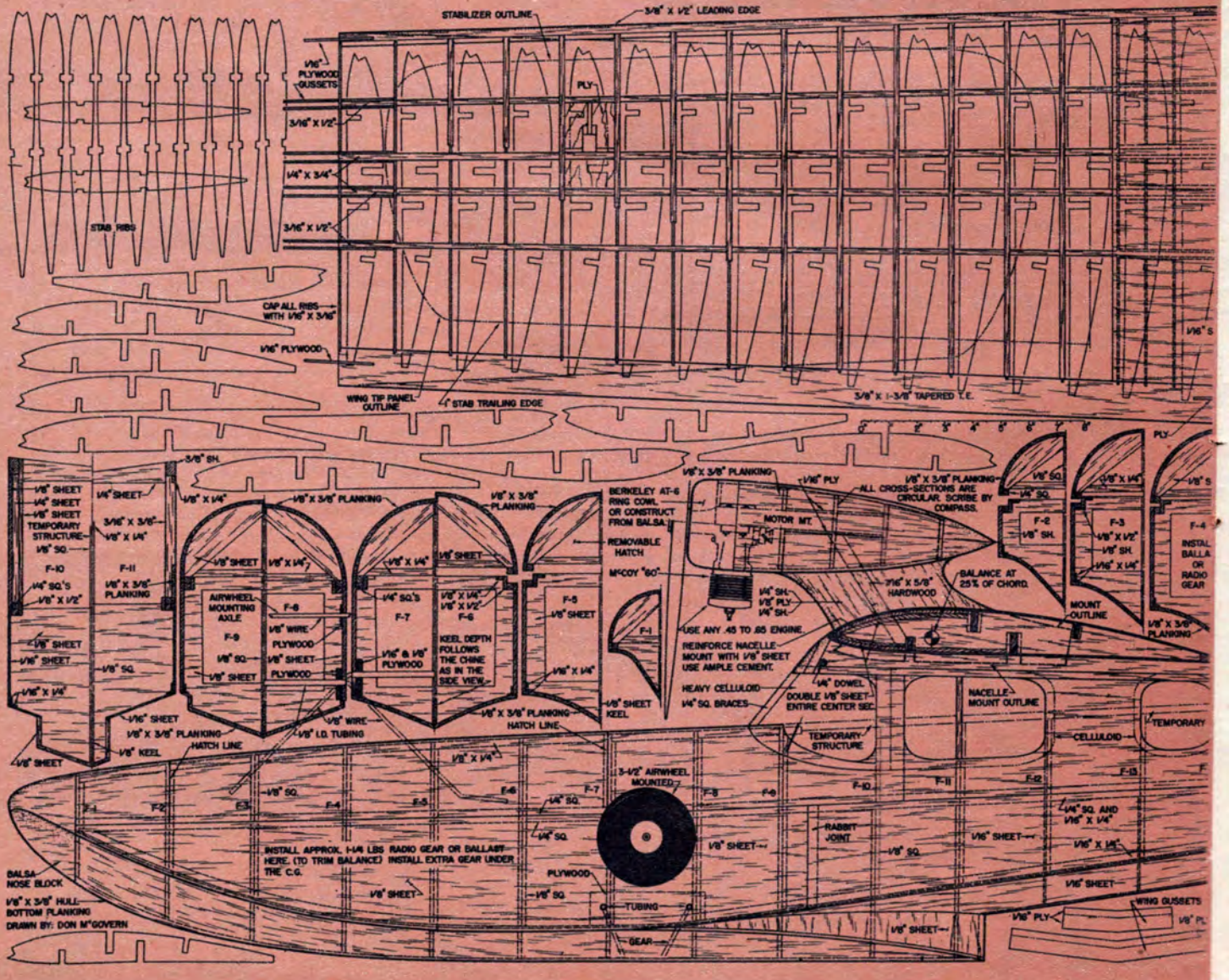
Dashboard could have been moved toward driver a few inches since, even with seat fully forward, a short person must stretch to reach hand brake, radio, and other accessories. Fairly wide windshield pillars create a slight blind spot. Instruments are well shielded from glare but located too low for long-distance driving comfort. Foot pedals are offset, requiring driver to move feet two to three inches to the left. Studebakers came through with steering wheels located uncomfortably low; removing of shims permits raising.

Leg room in front is a generous 42½", headroom is 37⅝", hiproom 59½". Arm rests are at good level. Rear seat has 41½" legroom, 36" headroom and 56" hiproom. Interior and exterior details are improved this year. Upholstery is Vinyl plastic. Conestoga station wagon body is available with V-8 Commander or L-head 6-cylinder Champion engines.

GIANT-SIZE PROJECT:

Radio Controlled Amphibian Plane Model

McGovern's Monster



When bigger and better flying boats are built Don McGovern will undoubtedly turn 'em out; meantime, his king-size ROG-ROW job

■ Stout hearts weaken when it comes to first flights, and ours was no exception.

Months had been spent on design and construction, and now it was time for our *Monster* amphibian to try its wings. Long Island Sound was glassy smooth, the kind of late fall weather you dream about.

The .60 roared to life and screamed as we leaned it out. We lowered the model into the water, and it was on its way. Ripples turned to foaming wake as the hull knifed the water at thirty miles an hour.

All our efforts were rewarded with the memory of that first perfect take-off. As it broke water, she climbed steeply in a left spiral till just a speck in the sky. The glide was majestic, as only a "C" job can be, culminated by an effortless 100-foot-long touch-down on the water.

1440 square inches of area, 9½ foot span, an 8-foot hull—this is a big airplane. Yet, weighted with radio gear, it is off the water consistently in 150 feet.

Open water flying is more fun than anything we ever experienced. It combines boating, swimming, fishing and flying all at once, and is equally enjoyed by all.

Aside from the social advantages, there is no dirt in the engine, no bent shafts, broken props, weed-punctured covering, no ground-in dirt, bent gears, or ground-looping damage, no abrasions, no waiting for your turn to fly R/C, and *no thermals* to worry about.

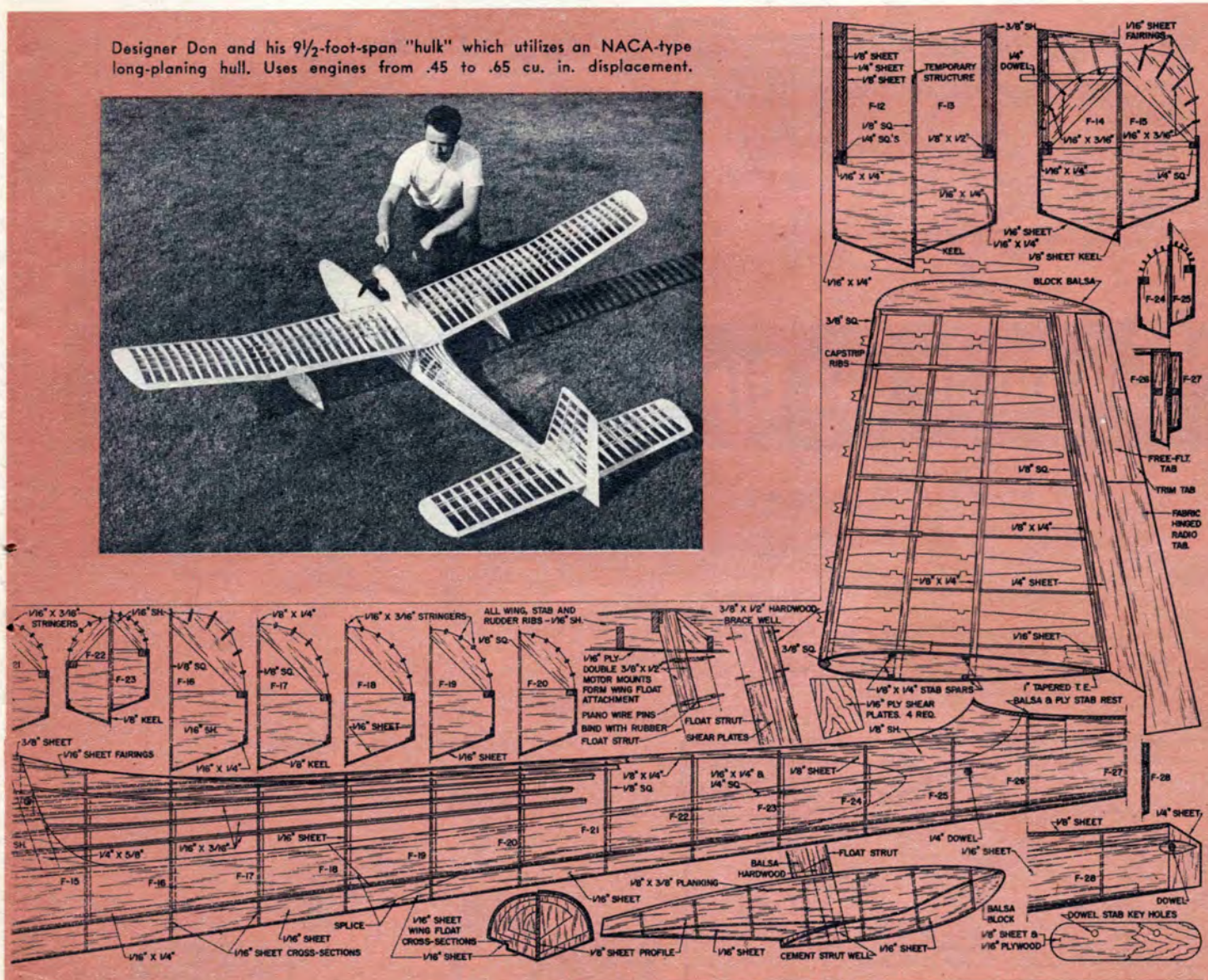
All this means that your model will last five to ten years. A single coat of dope each season keeps it looking like new. Salt water has no effect on the model at all!

It is practical then to put a great deal of effort into a model, as 2,000 flights can be expected. But who could transport it? you may ask.

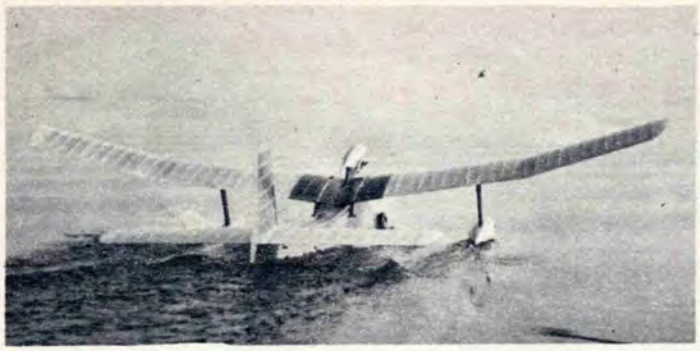
The fuselage fits with ease inside most club coupes and all sedans. We transport the wing strapped to an 8-ft. pine plank lashed to carrying racks on the roof of the car. A speed of 50 mph does not disturb it.

Complete building details are available on the full-size plans.

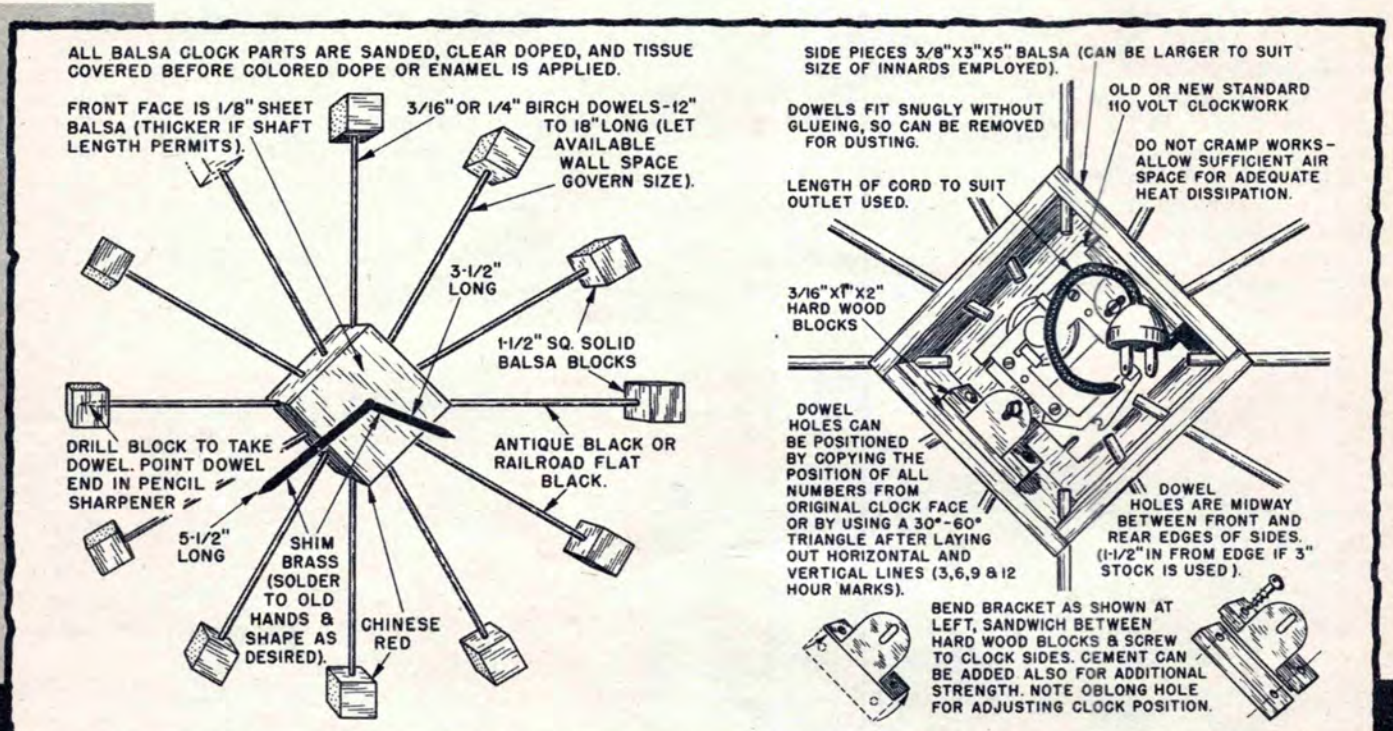
Designer Don and his 9½-foot-span "hulk" which utilizes an NACA-type long-planing hull. Uses engines from .45 to .65 cu. in. displacement.



Full size plans for McGovern's Monster and data are on Group Plan #654 (50c) by Hobby Helpers, 770 Hunts Point Ave., N. Y. C. 59.

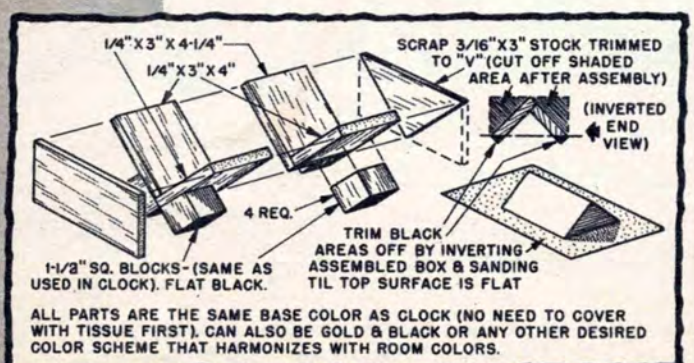


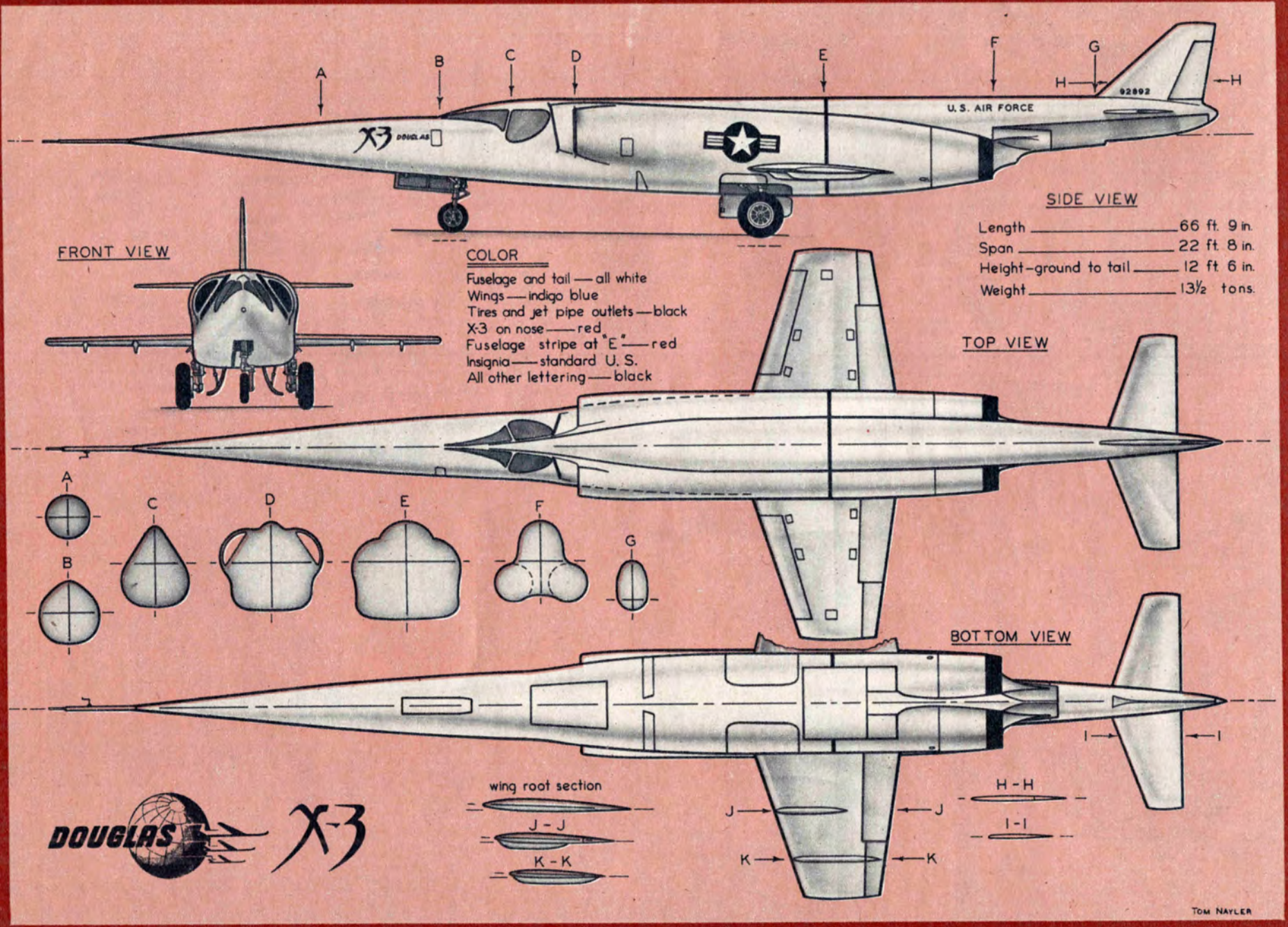
About the closest thing to realism that you'll ever approach in a model is right here as plane takes off (left) and lands.


ALL BALSA CLOCK PARTS ARE SANDED, CLEAR DOPED, AND TISSUE COVERED BEFORE COLORED DOPE OR ENAMEL IS APPLIED.
FRONT FACE IS 1/8" SHEET BALSA (THICKER IF SHAFT LENGTH PERMITS).
3/16" OR 1/4" BIRCH DOWELS-12" TO 18" LONG (LET AVAILABLE WALL SPACE GOVERN SIZE).
3-1/2" LONG
1-1/2" SQ. SOLID BALSA BLOCKS
DRILL BLOCK TO TAKE DOWEL. POINT DOWEL END IN PENCIL SHARPENER
5-1/2" LONG
SHIM BRASS (SOLDER TO OLD HANDS & SHAPE AS DESIRED).
CHINESE RED
ANTIQUE BLACK OR RAILROAD FLAT BLACK.
SIDE PIECES 3/8"X3"X5" BALSA (CAN BE LARGER TO SUIT SIZE OF INNARDS EMPLOYED).
DOWELS FIT SNUGLY WITHOUT GLUEING, SO CAN BE REMOVED FOR DUSTING.
OLD OR NEW STANDARD 110 VOLT CLOCKWORK
DO NOT CRAMP WORKS-ALLOW SUFFICIENT AIR SPACE FOR ADEQUATE HEAT DISSIPATION.
LENGTH OF CORD TO SUIT OUTLET USED.
3/16"X1"X2" HARD WOOD BLOCKS
DOWEL HOLES CAN BE POSITIONED BY COPYING THE POSITION OF ALL NUMBERS FROM ORIGINAL CLOCK FACE OR BY USING A 30°-60° TRIANGLE AFTER LAYING OUT HORIZONTAL AND VERTICAL LINES (3,6,9 & 12 HOUR MARKS).
DOWEL HOLES ARE MIDWAY BETWEEN FRONT AND REAR EDGES OF SIDES. (1-1/2" IN FROM EDGE IF 3" STOCK IS USED).
BEND BRACKET AS SHOWN AT LEFT, SANDWICH BETWEEN HARD WOOD BLOCKS & SCREW TO CLOCK SIDES. CEMENT CAN BE ADDED ALSO FOR ADDITIONAL STRENGTH. NOTE OBLONG HOLE FOR ADJUSTING CLOCK POSITION.

Wall Clock and Planter Will Please Mom

■ The planter's purely decorative and the "air-plant" it holds has been dyed green (any 5 & 10 store), but the clock is the real McCoy. All you need are some dowels, balsawood and innards of an electric clock. The rest is easy as pie for any model builder who's used nature's most workable wood—balsa. "Numeral" blocks can be flat to the viewer or angled. Dowels are removed for dusting.


1/4"X3"X4-1/4"
1/4"X3"X4"
SCRAP 3/16"X3" STOCK TRIMMED TO "V" (CUT OFF SHADED AREA AFTER ASSEMBLY)
(INVERTED END VIEW)
4 REQ.
1-1/2" SQ. BLOCKS-(SAME AS USED IN CLOCK). FLAT BLACK.
TRIM BLACK AREAS OFF BY INVERTING ASSEMBLED BOX & SANDING TIL TOP SURFACE IS FLAT
ALL PARTS ARE THE SAME BASE COLOR AS CLOCK (NO NEED TO COVER WITH TISSUE FIRST). CAN ALSO BE GOLD & BLACK OR ANY OTHER DESIRED COLOR SCHEME THAT HARMONIZES WITH ROOM COLORS.



DOUGLAS X-3 is the latest of seven special high-speed research airplanes flight tested by the Air Force, Navy and NACA at Edwards AFB, Muroc, Calif. As a flying laboratory, it explores flight characteristics at speeds around 2000 mph, and investigates problems associated with heat (300-600 deg. F.) generated at these velocities which affects the strength of material. The X-3 "Beast" is loaded with 1200 lbs. of instruments, strain and temperature gauges and has 850 pin-hole orifices which measure pressures across its various portions. The craft has a high wing loading, measuring close to 150 lbs. per square foot of wing area under full load condition. A three-mile run is necessary for it to take off.

Weekend on WHEELS

Take a good bike, spend $1 a day—and see America via AYH tours

Rarely does an outing present as much enjoyment as a bicycle tour of the countryside. Every pathway is a highway for the nimble two-wheeler, the rider fully exposed to fresh air and the changing scene—now a cluster of woods, now a waterfall.

Earlier in the week, the bikes have been shipped via rail to a rural point from which the trip will start. The group, members of American Youth Hostels, is making sure that the saddlebags are loaded with all necessary equipment.

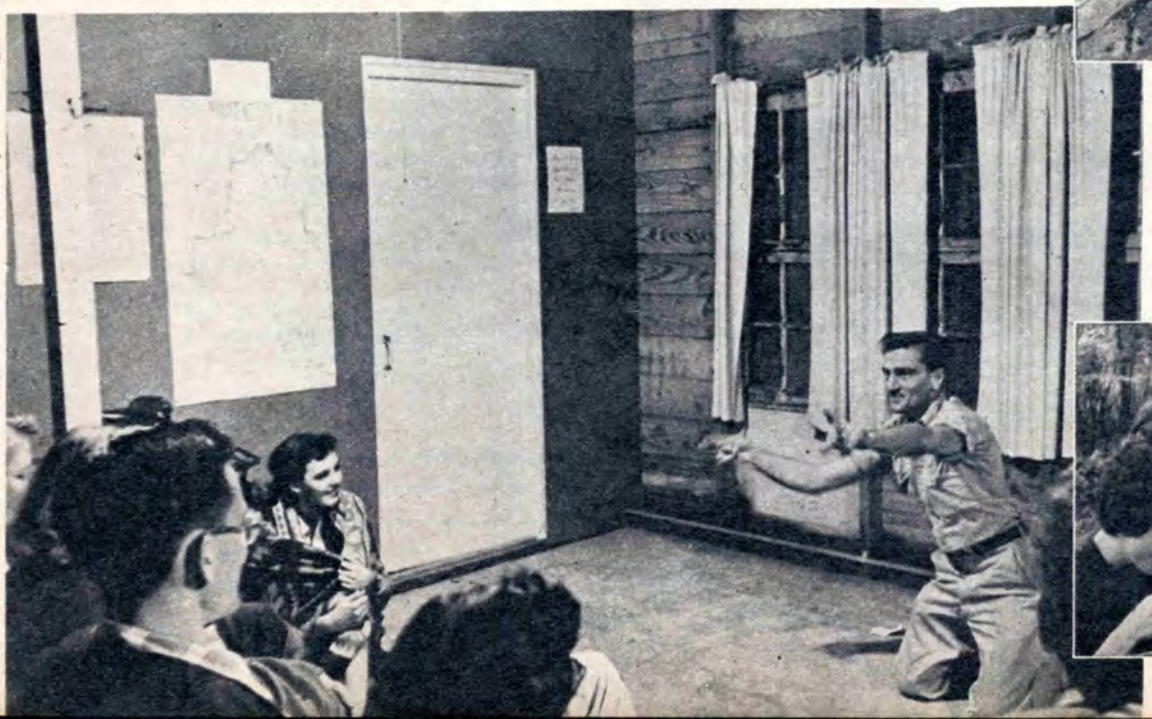
Bicycles retrieved from railroad station, hostelers wheel their way toward the open road. Journey usually starts at 10:30 a.m. on a Saturday, with the trip carefully mapped out and overnight stop arranged for by AYH.

A stop at a gas station to check tires for air provides a welcome respite. Lunch will be prepared later. For those who do not own one, a bicycle can be rented through AYH.

■ Bicycling tours, once a great sport in the U. S. and still extremely popular in Europe, are again jumping into favor here. This group of young people has embarked on a week-end trip through New York State's picturesque Hudson Valley. Similar junkets are sponsored all over the country by American Youth Hostels, an organization whose aim is "greater knowledge and understanding of the world." Anyone can belong by paying an annual "hostel pass" fee: $2 for members under 18, $3 for those between the ages of 18 and 21, $4 for anybody over 21 and $6 for Family Pass which includes husband, wife, and children under 18. Your pass entitles you to special rates at any American AYH hostel, and assistance in planning weekend bike tours. The organization will also arrange for cycle trips in European and other countries for groups or individuals—who must be 18 or over in age. American Youth Hostels, 6 East 39th St., New York, N. Y., is national headquarters.

Lunch break. Outdoor fireplace is put to service by a trio of chefs. Those who cannot cook first bring prepared food, soon learn how.

End of day finds the bikers in one of the hostels playing charades for relaxation. Map on the wall shows suggested tour. Hostelers can lay out their own course or get help from AYH in planning routes. Overnight stops in converted houses, old churches, remodeled barns.



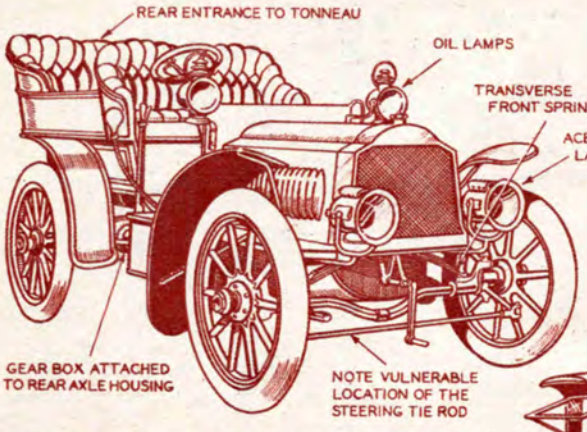
Mess kits and paper plates mean minimum of "K.P." Young members are under supervision of an adult leader, with safety rules.

AUTO Progress

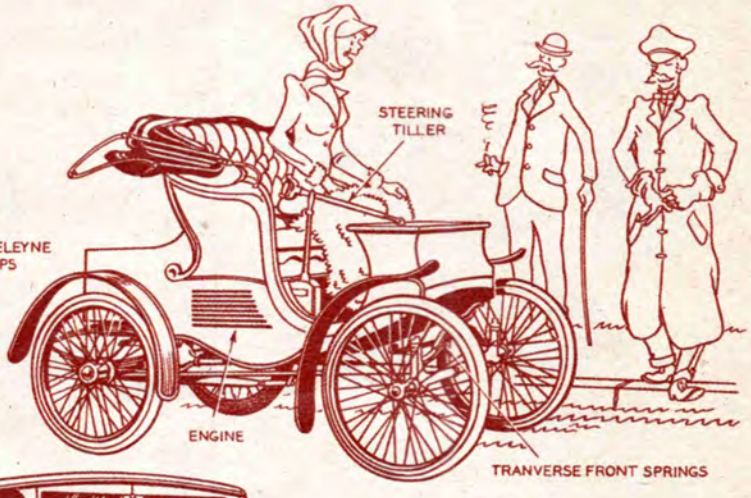
By DOUGLAS ROLFE

THE PACKARD STORY

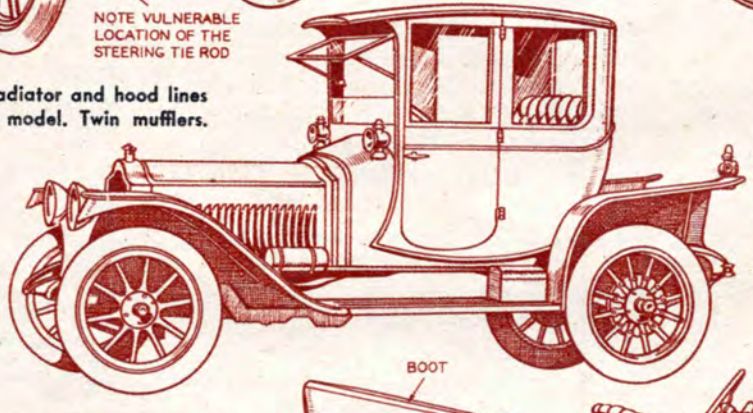
Distinctive styling marked the Packard —long famed as the American luxury car


REAR ENTRANCE TO TONNEAU
OIL LAMPS
TRANSVERSE FRONT SPRING
ACETELEYNE LAMPS
GEAR BOX ATTACHED TO REAR AXLE HOUSING
NOTE VULNERABLE LOCATION OF THE STEERING TIE ROD

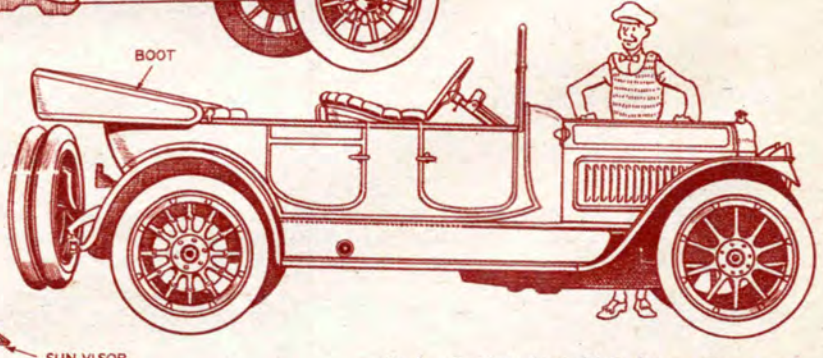
The distinctive Packard radiator and hood lines made debut on 1903-04 model. Twin mufflers.

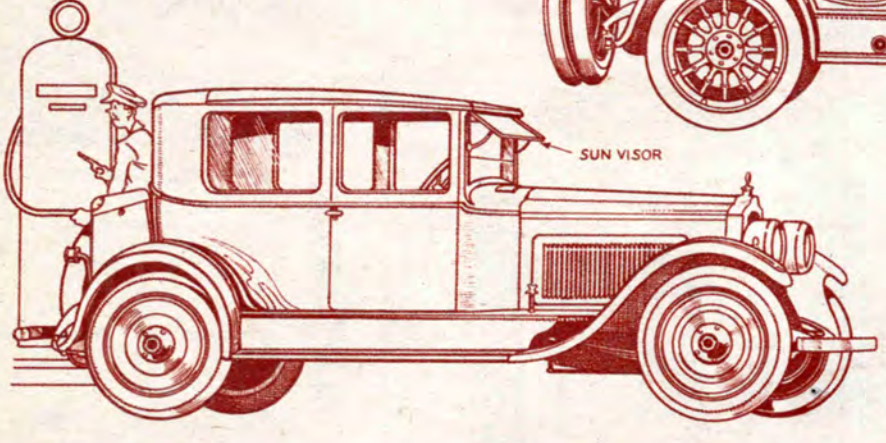


Single-cylinder Ohio-Packard was first of this famous family of automobiles. It remained in production until 1904 when it was superseded by a four-cylinder car with engine in front and three-speed transmission.



The 1913 six-cylinder Packard was one of the first luxury cars. The custom coupe shown cost between $4,150 and $5,000.



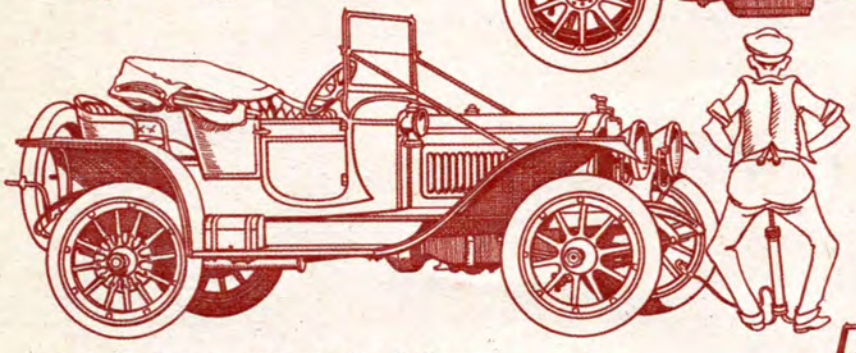


Packard's first "Twin-Six" shown above was introduced in 1916 and was one of the most powerful cars marketed in the U.S. at the time. It was produced from 1916 until 1923, enjoyed great popularity.

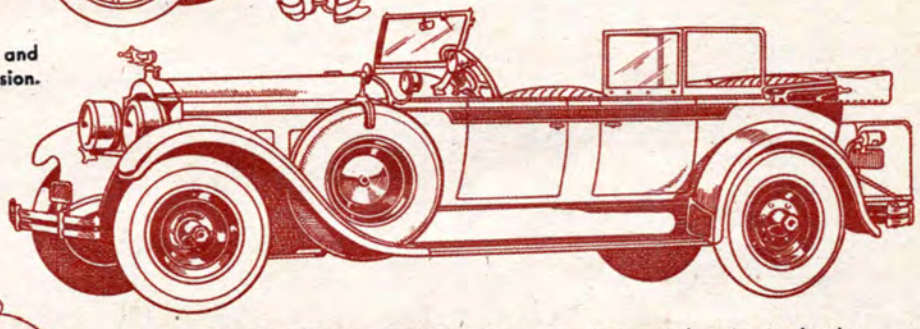
Packard entered straight-eight field in 1923 with many body styles to choose from besides sedan-coupe shown at left. Disc wheels and low-pressure tires were a feature of this model. Four-wheel brakes came in 1924.

The Packard story goes back to 1899 when J. W. and W. D. Packard set up business in Warren, Ohio, after which state their first car was named. The factory was soon moved to Detroit and the name Packard introduced. Starting with the first single cylinder car, the company has produced a bewildering variety of models over the years: big fours, little fours; big sixes and little sixes; twin sixes and straight eights—mostly good. The distinctive Packard radiator lines appeared as early as 1904, and for 50 years have been the symbol of fine

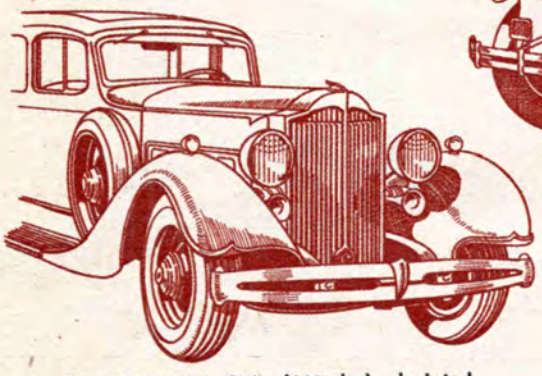
This four-cylinder Packard Limousine was the last word in luxury car design in its day. The model 30 appeared in 1907; above is the 1911 version. It was priced at a neat $4,350.



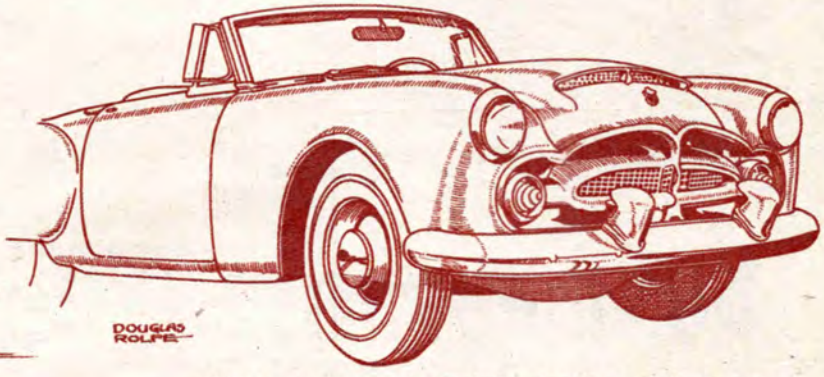
Packard's first six, 1912. Electric starter and lights, 60 hp engine, conventional transmission.



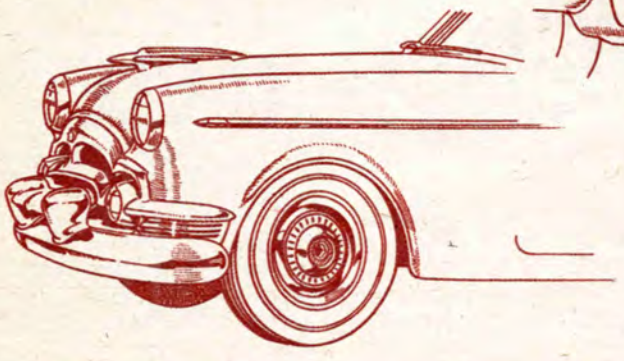
Straight-eight convertible phaeton marked a high point in development of original Packard lines. Custom models: up to $8,725.



The 1934 "Twin-Six" (160 hp) deviated from normal Packard styling, but the V-type radiator retained its characteristic lines.



With Packard's experimental Pan-American sport car, produced in 1952, the distinctive lines associated with earlier models disappear. 180-hp straight eight.



Detail of nose end and radiator grille of the 1954 model Packard Clipper shows unmistakable influence of the experimental Pan-American design.

automobiles. Today, though one of the few independent automobile companies to remain in business, the Packard firm has succumbed to the present styling trends. Apart from the building of new cars, this outfit served with distinction in two world wars, making vital war material, and it was one of the first auto concerns to build tanks. During World War II it produced the famed Packard Merlin airplane engine which powered some of our fastest and deadliest fighter planes. And the first diesel aircraft engine in U.S. was Packard's, 1934.

AIR TRAILS HOBBIES
HOME and SCHOOL

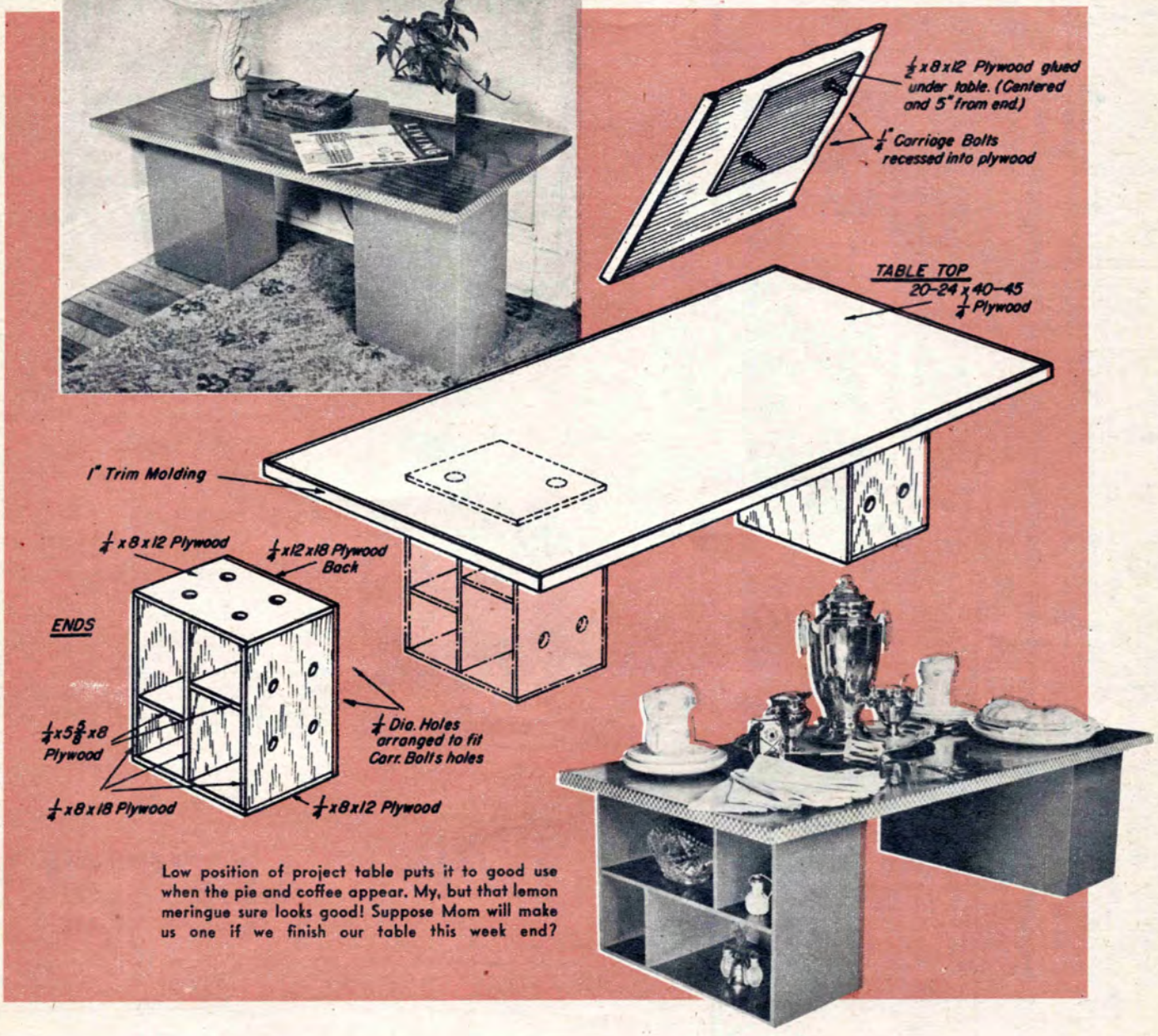
Workshop Award

Here's An Easy Project That Will Make Every Day Mother's Day!

BUILD THIS DUAL PURPOSE TWO-LEVEL TABLE

■ Anyone who has ever positioned a board across two orange crates will find this project has a familiar appearance. Welcome addition to any living room or den, it's almost as easy to build as those O-C "tables" were. By backing off four nuts you can quickly convert the 18-inch-high snack table into a "low bridge" coffee table that's just a foot off the floor. This latter version, you'll find, goes very well with the modern, low living room furniture so popular today. Multi-purpose shelves work equally well in either position, holding food containers during parties and TV sessions or decorative accessories at any time. Simple construction makes this an easy project to complete. Skilled shop craftsmen can construct our two-level table with fancy joints if they so desire. Variation on the theme would be leave the 12 x 18 inch back piece off each of the supporting end boxes, admitting light all the way through. Fancy decal patterns, special stains and finishes or metal striping can be applied to the trim molding to harmonize with any room color scheme. Holes are drilled in the 8 x 12 inch plywood rectangles before they are glued under the table top. Short carriage bolts are run through these holes with heads recessed in the plywood.

"High level" operations with dual purpose table shown left. Here top is 18 inches from floor.


½ x 8 x 12 Plywood glued under table. (Centered and 5" from end.)
¼" Carriage Bolts recessed into plywood
TABLE TOP
20–24 x 40–45
¼ Plywood
1" Trim Molding
¼ x 8 x 12 Plywood
¼ x 12 x 18 Plywood Back
ENDS
¼ x 5⅝ x 8 Plywood
¼ Dia. Holes arranged to fit Carr. Bolts holes
¼ x 8 x 18 Plywood
¼ x 8 x 12 Plywood

Low position of project table puts it to good use when the pie and coffee appear. My, but that lemon meringue sure looks good! Suppose Mom will make us one if we finish our table this week end?

BE A TALENT DETECTIVE! "TURN IN" YOUR FAVORITE CRAFTSMAN!

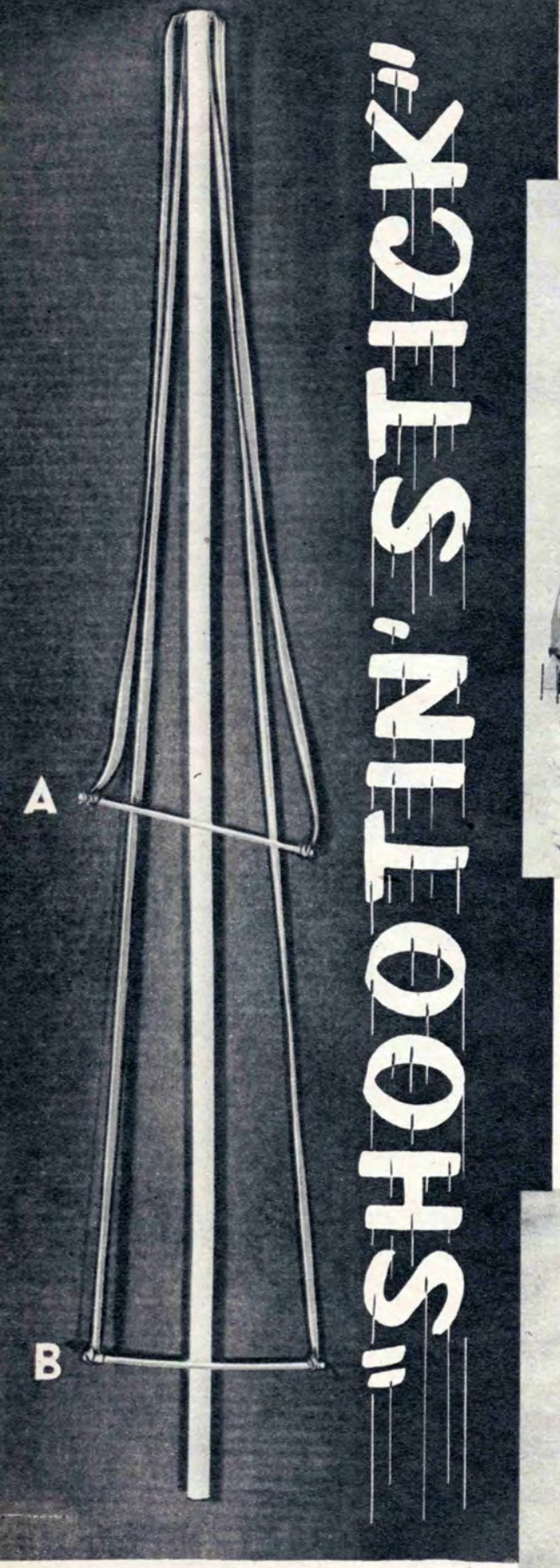
$50 to the Talent Reporter

■ Each issue we will present a $50 cash award to the individual who has brought to our attention the winning original shop project submitted by a school shop teacher or a home shop craftsman. The "Talent Reporter" can be of any age as can be the winning shop designer whose project is selected as best for the month. The project should be an item of special usefulness or decorative value and within the abilities of the average shop student or home workshop fan. Rare or hard-to-obtain materials should be avoided. Send your nominations to Shop Project Award, c/o Air Trails HOBBIES For Young Men, 304 East 45th Street, New York City 17.

$50 to the Teacher or Craftsman

■ Each issue we will present a $50 cash award to the school shop teacher or home shop craftsman whose winning original shop project has been brought to our attention by a Shop Project Talent Reporter. If the editors find your project of sufficient interest to present here after it has been called to their attention by a Talent Reporter, you will get full information on how to prepare rough drawings. The sample projects illustrated should start you thinking—what type of item can be completed in the school or home? is it of special interest to young fellows with mechanical aptitude? will it tie in with their hobbies? is it of lasting value?

"SHOOTIN' STICK"



Your "shootin' stick" can be 3 ft. hardwood dowel or longer straight stick with rounded-off edges. "A" is rubber length before stretching for flight; "B" ready for take-off. Start tests with 1/4" flat T-56.

AT LONG LAST! T-56 RUBBER POWERED DELTAS & ROCKETS!

For rocket flights point stick straight up; other jobs fly off in climb. Stick can be as long as desired.

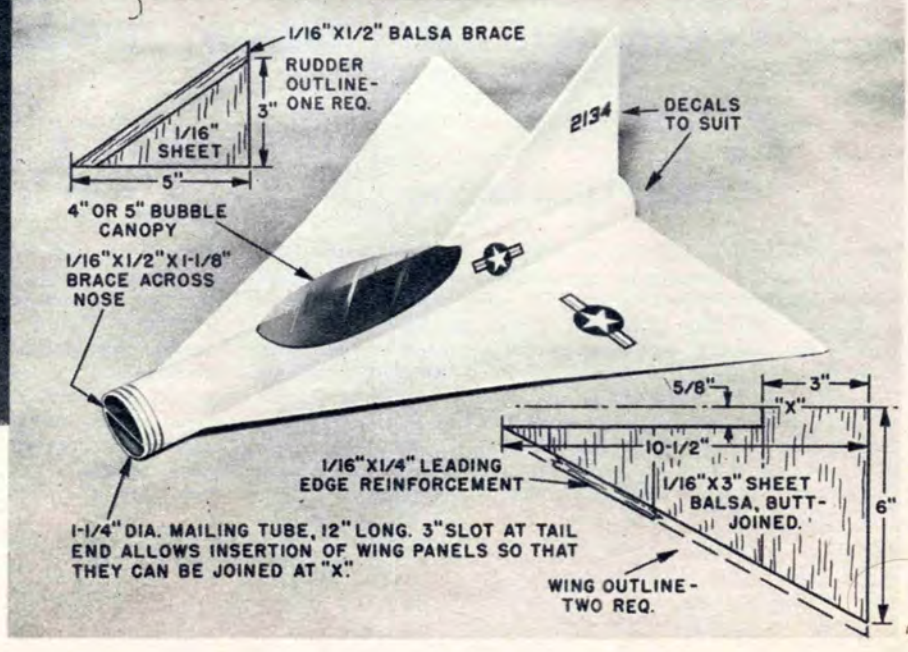
■ When the jet age caught up with the novice air-model flyer, he found it difficult to reproduce in workable miniature form many of the latest aerodynamic developments — especially when it came to jet and rocket craft. What about the average fan and flyer, the youngster who depended upon rubber bands and ready-made props?

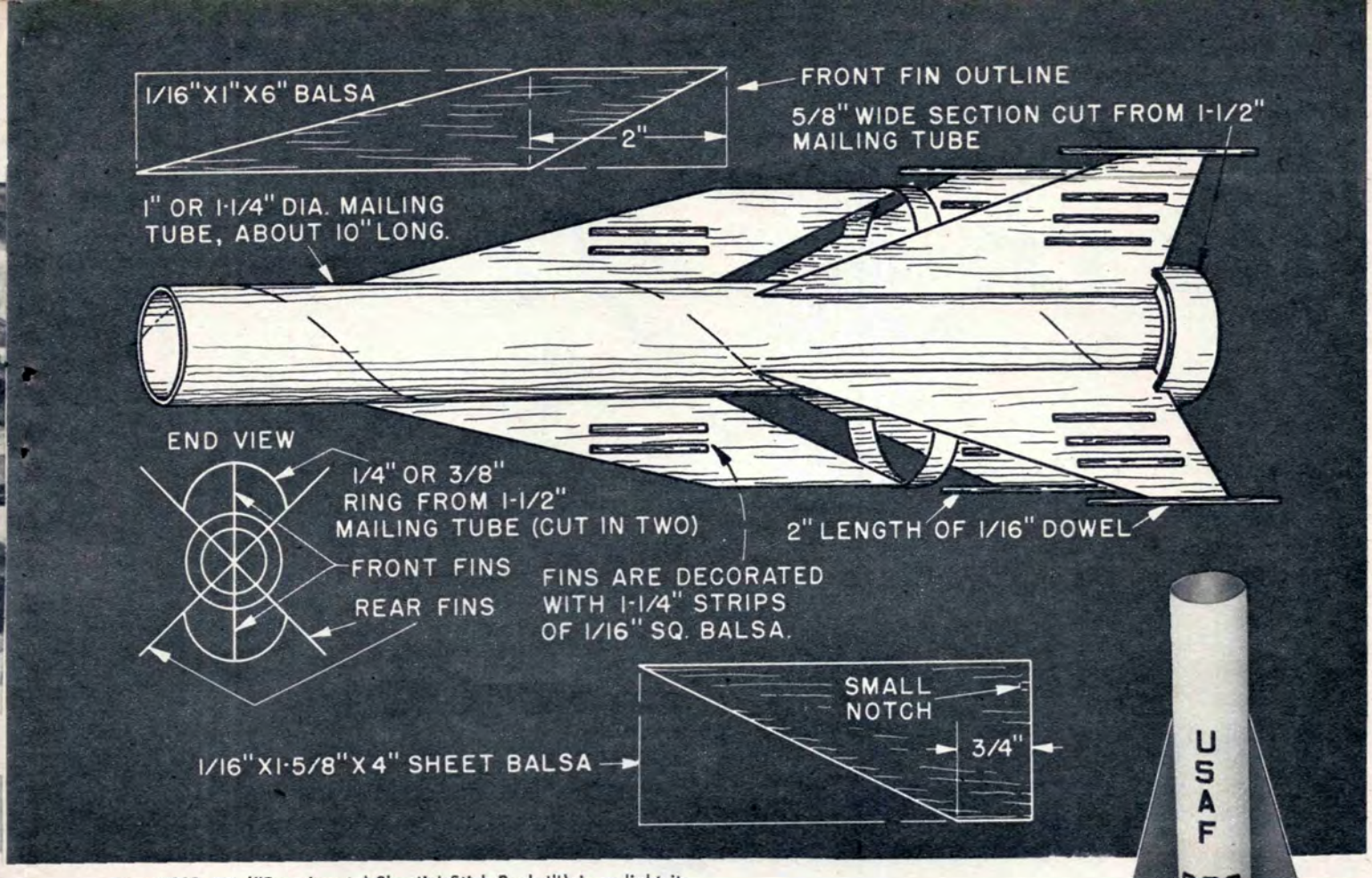
Now, without noise, with great economy of "fuel" you can fly "jets" to your heart's content. You still use the old and reliable rubber thread (sold under the trade name of T-56), only now you affix it to a slot in the top of a dowel or rounded stick (see photo). A smaller dowel is tied to the ends of the strands of rubber and you're ready to fly your "shootin' stick" jets and rockets.

You can vary the number of strands, the size (thickness) of the rubber as well as the length of the rubber and stick to produce any flight desired. PRIZE OFFER! We will pay $25 for the best photos of outstanding original design "shootin' stick" aircraft or revamped kit jobs which run in ATH. Send your pictures to "Shootin' Stick Models," c/o Air Trails HOBBIES, 304 E. 45th St., N.Y.C. (17).

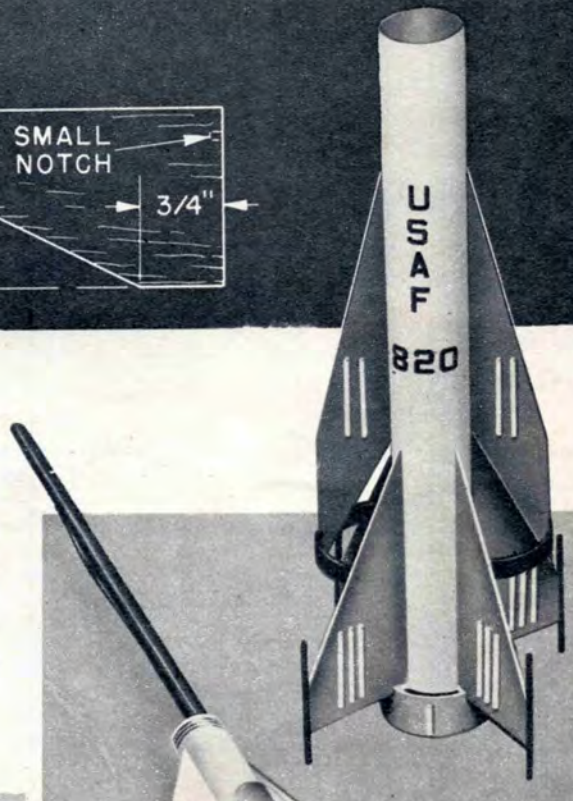
Now ...LET'S FLY

Nose brace (below) is optional; add clay or glue solder to nose to obtain normal glide as with standard modelplane.



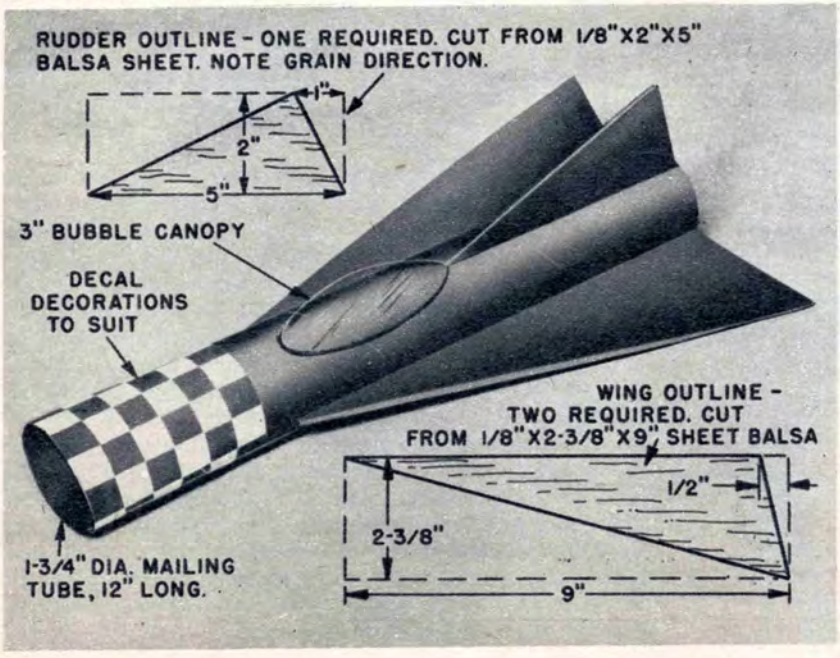

1/16"X1"X6" BALSA
2"
FRONT FIN OUTLINE
5/8" WIDE SECTION CUT FROM 1-1/2" MAILING TUBE
1" OR 1-1/4" DIA. MAILING TUBE, ABOUT 10" LONG.
END VIEW
1/4" OR 3/8" RING FROM 1-1/2" MAILING TUBE (CUT IN TWO)
FRONT FINS
REAR FINS
2" LENGTH OF 1/16" DOWEL
FINS ARE DECORATED WITH 1-1/4" STRIPS OF 1/16" SQ. BALSA.
SMALL NOTCH
3/4"
1/16"X1-5/8"X4" SHEET BALSA

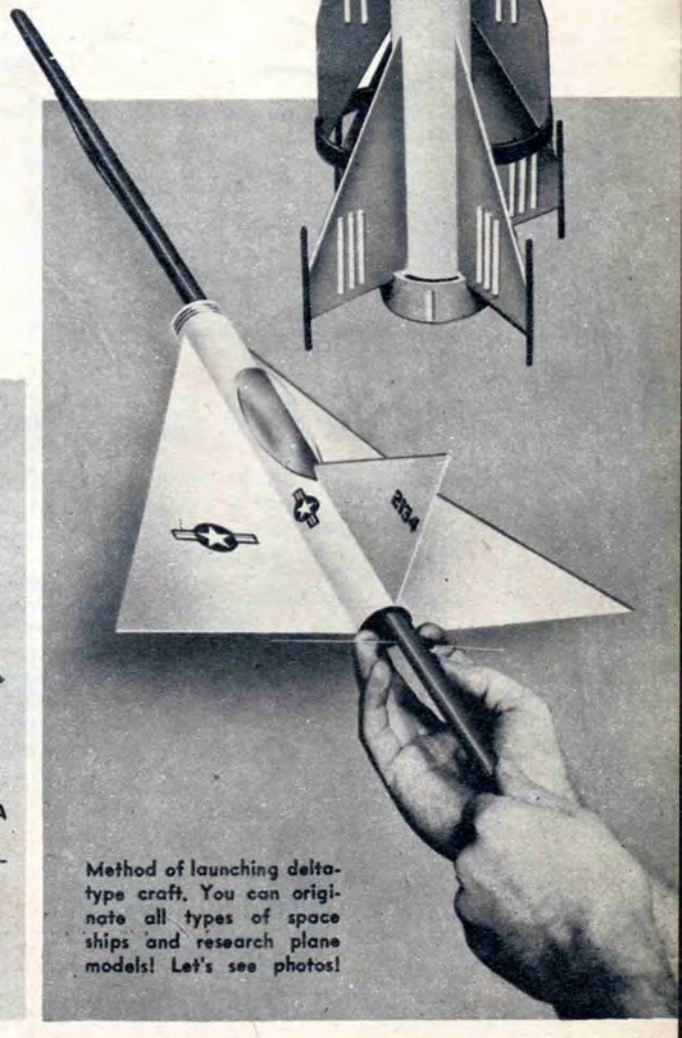
Your XSSR-820 ("Experimental Shootin' Stick Rocket") is so light it can be propelled straight up and return straight down. Add weight to nose to achieve this (maybe a parachute?).



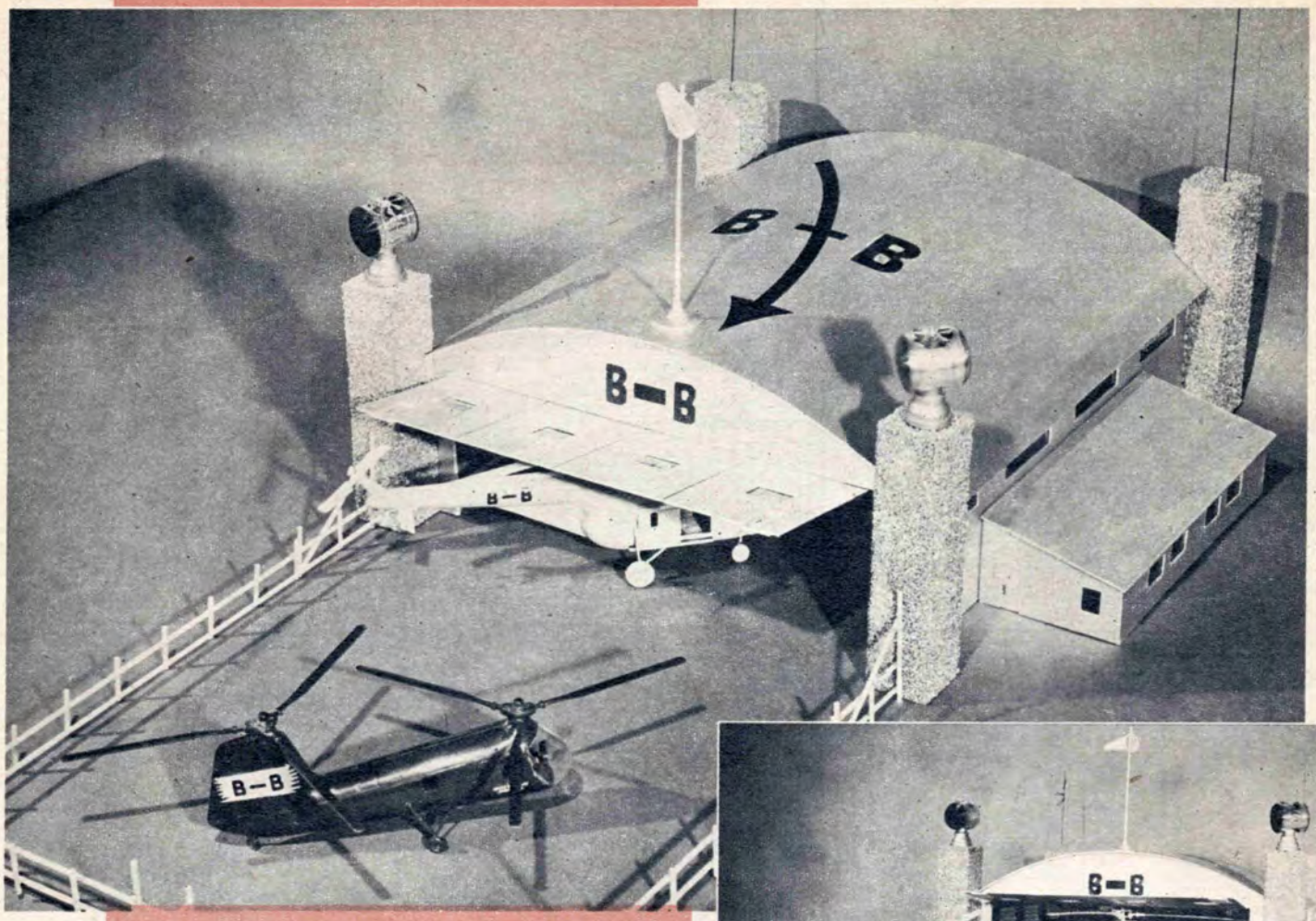
SCALE JET MODELS

Clipped delta (below) should be balanced with clay or lead so glide is straight ahead (no climb) when thrown hard.





Method of launching delta-type craft. You can originate all types of space ships and research plane models! Let's see photos!



Bobby Benson and his "Songs of the B-Bar-B" program are broadcast coast-to-coast on the Mutual Broadcasting System. Consult your local listings for time and station. Follow the stories and songs of Bobby, foreman Tex and the fabulous Windy Wales; B-Bar-B ranch hands are busy hobby-model fans in their spare time.

Here Are The Awards!

FIRST PRIZE: $100.00; SECOND PRIZE: $50.00; NEXT 4 PLACES: Eveready Battery equipped Readyflash Camera Outfit; camera takes 8 pictures 2¼ x 3¼" on No. 620 roll film; complete with flash unit, 3 rolls of film, 6 flash bulbs and large zipper carry-all case; ideal for taking snapshots 'round the clock; includes instruction book. NEXT 40 PLACES: Two-tone fountain pen-type personal flashlights by Eveready complete with the long-lasting famous "Nine Lives" Eveready batteries. These pocket flashlights measure 5 inches in length, have diameter of 9/16 inch. Very handy to own.

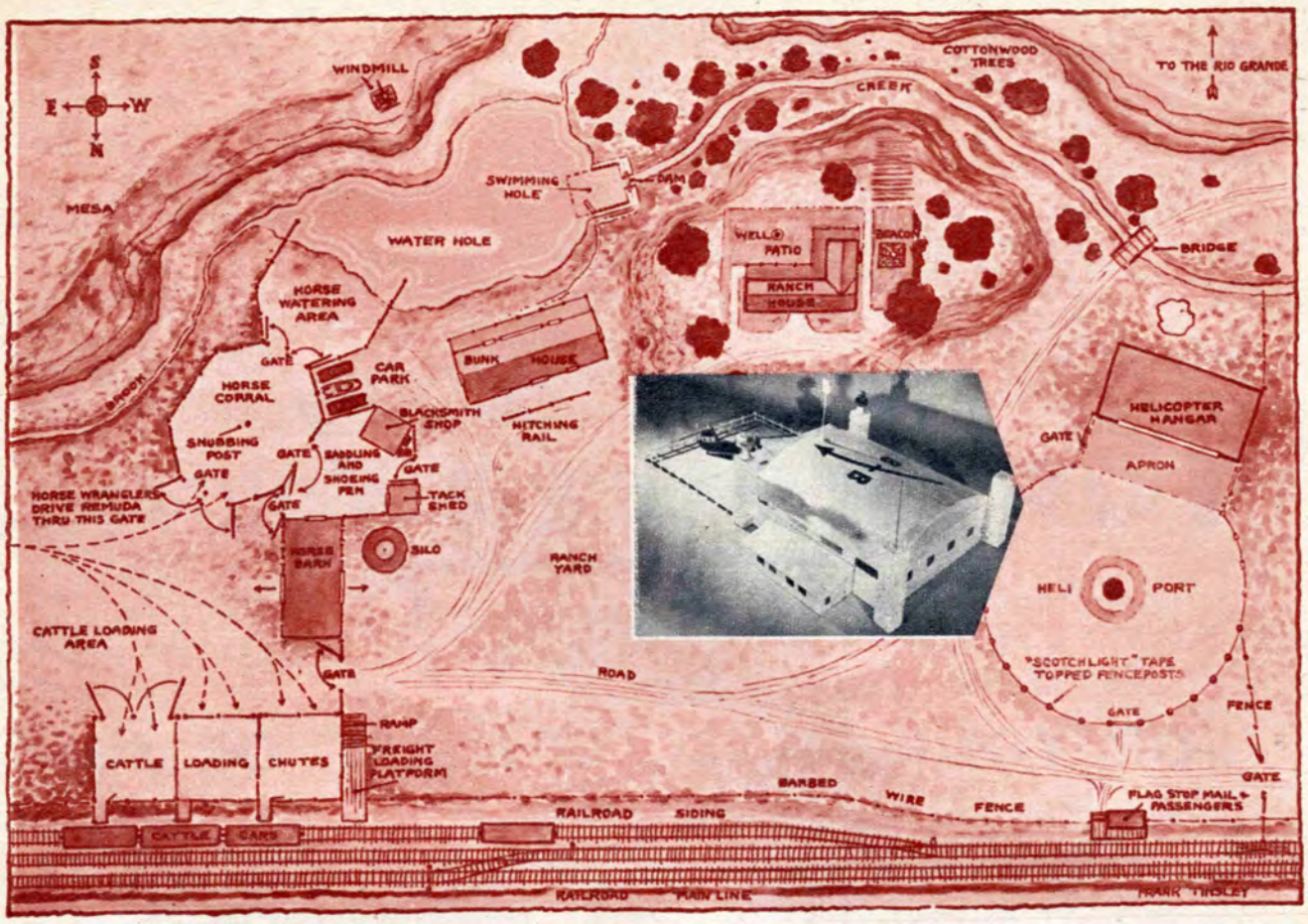
FLASH OUTFIT

FOR FUN and PRIZES!

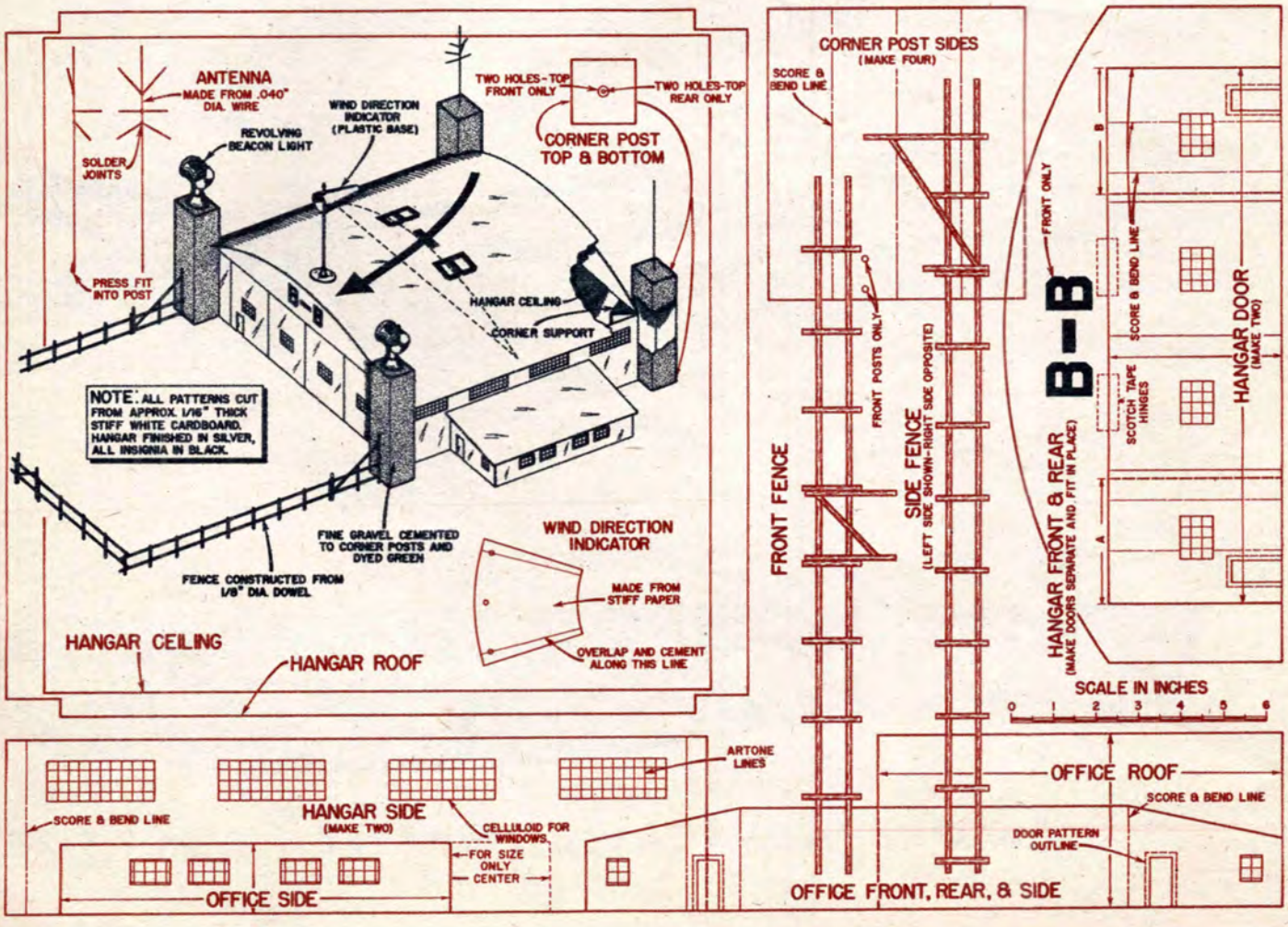
Build Bobby Benson's

B-BAR-B Helioport Hangar

■ Not only will this model helicopter hangar building project be of special interest to all listeners of the famous "Songs of the B-Bar-B" program aired nationally over Mutual network stations, but it will appeal, also, to all plan-boat-railroad model fans since it is such an easy affair to turn out. But note this: the best model will suffer if it's poorly photographed! We'll judge your model on the basis of the photo you submit. DON'T SEND YOUR COMPLETED HANGAR MODEL TO US—JUST SEND A PHOTO OF IT! To be considered in the judging your photo entry must be in our hands not later than June 30, 1954. ALSO NOTE THIS: You need not use these exact plans. You can make any type of structure which you feel would best serve as the B-Bar-B helicopter hangar; use any materials, but be sure you take a good photo of it! Work from your own plans or these; full-size patterns can be had from Hobby Helpers.



You can obtain full-size drawings and instructions for this hangar from Hobby Helpers (Plan # 654B-B, 35c), 770 Hunts Point Ave., New York 59, N. Y.

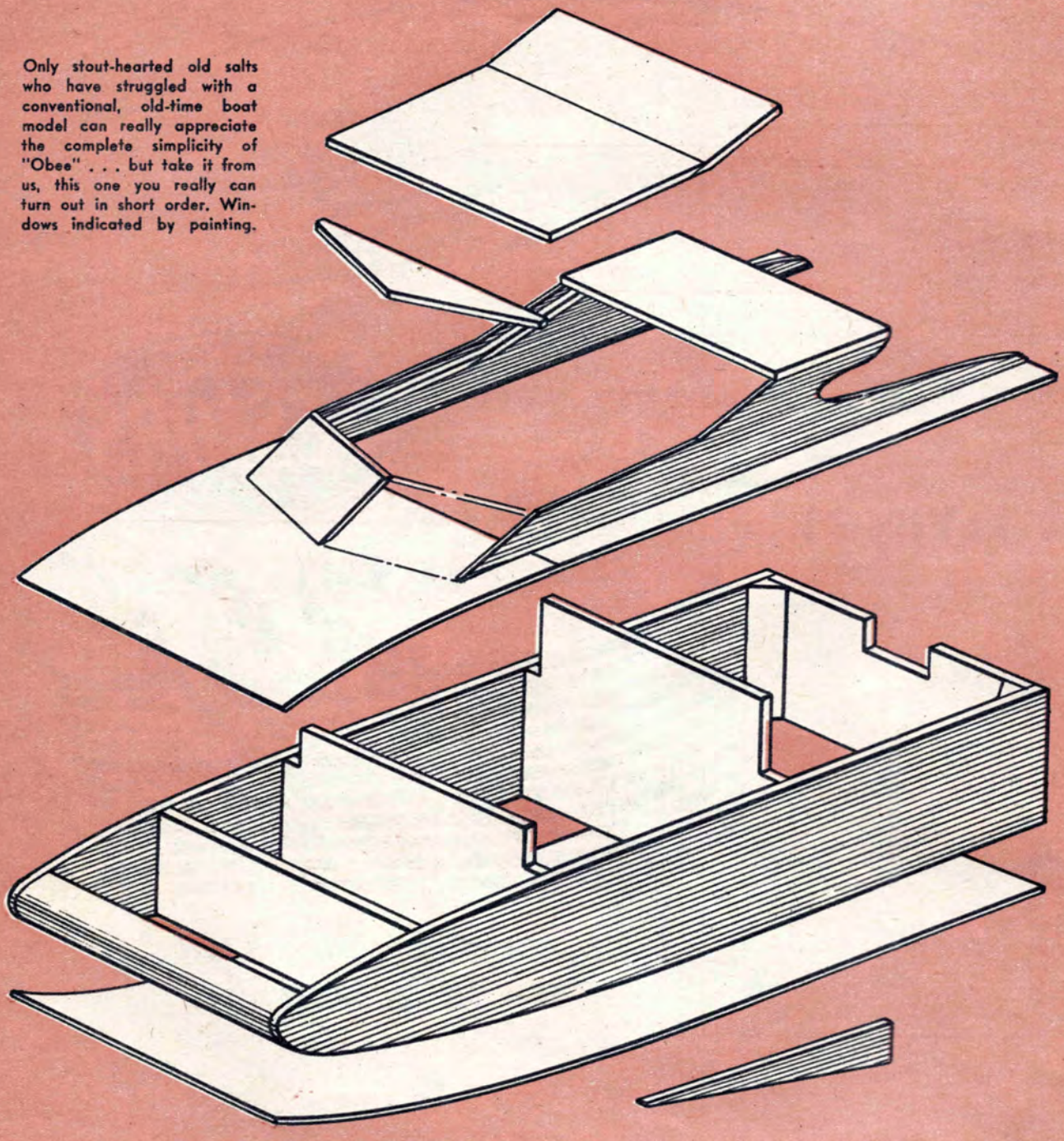

ANTENNA
MADE FROM .040" DIA. WIRE
WIND DIRECTION INDICATOR (PLASTIC BASE)
REVOLVING BEACON LIGHT
SOLDER JOINTS
TWO HOLES-TOP FRONT ONLY
TWO HOLES-TOP REAR ONLY
CORNER POST TOP & BOTTOM
PRESS FIT INTO POST
B-B
HANGAR CEILING
CORNER SUPPORT
NOTE: ALL PATTERNS CUT FROM APPROX. 1/16" THICK STIFF WHITE CARDBOARD. HANGAR FINISHED IN SILVER, ALL INSIGNIA IN BLACK.
FINE GRAVEL CEMENTED TO CORNER POSTS AND DYED GREEN
FENCE CONSTRUCTED FROM 1/8" DIA. DOWEL
WIND DIRECTION INDICATOR
MADE FROM STIFF PAPER
OVERLAP AND CEMENT ALONG THIS LINE
HANGAR CEILING
HANGAR ROOF
CORNER POST SIDES (MAKE FOUR)
SCORE & BEND LINE
FRONT FENCE
FRONT POSTS ONLY
SIDE FENCE (LEFT SIDE SHOWN-RIGHT SIDE OPPOSITE)
FRONT ONLY
B-B
SCORE & BEND LINE
HANGAR DOOR (MAKE TWO)
SCOTCH TAPE HINGES
HANGAR FRONT & REAR (MAKE DOORS SEPARATE AND FIT IN PLACE)
SCALE IN INCHES
0 1 2 3 4 5 6
ARTONE LINES
OFFICE ROOF
SCORE & BEND LINE
DOOR PATTERN OUTLINE
SCORE & BEND LINE
HANGAR SIDE (MAKE TWO)
CELLULOID FOR WINDOWS
FOR SIZE ONLY CENTER
OFFICE SIDE
OFFICE FRONT, REAR, & SIDE

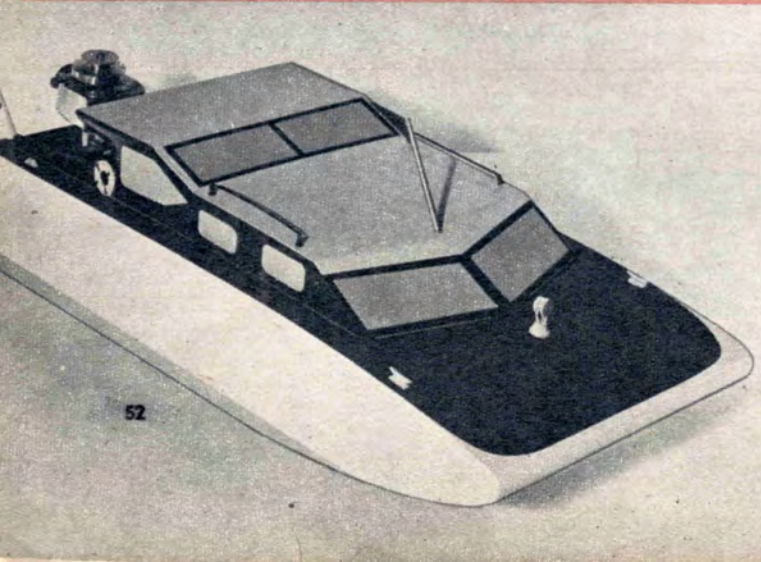
TOP POWER formanc
FOR YOUR STUNT, CONTEST, OR JUST-FOR
THE OUTSTANDING All-Purpose FUEL FOR EVE
TESTOR CHEMICAL COMPANY • ROCKFORD,

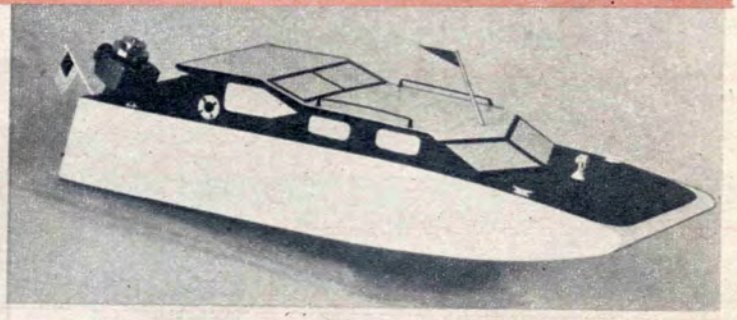
ce...
OR-FUN FLYING!
TESTORS
"32"
CAUTION
INFLAMMABLE
MIXTURE
DO NOT USE
NEAR FIRE
OR FLAME
A.T.F.D. C/A 972
THE PERFECT AVIATION FUEL
FOR All MODEL ENGINES
A Product of
TESTOR CHEMICAL COMPANY
ROCKFORD, ILLINOIS
EVERY STANDARD MODEL ENGINE...
D, ILLINOIS

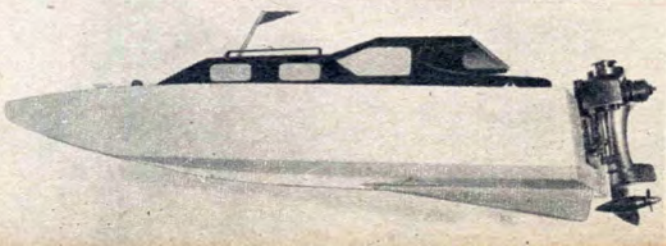
"OBEE" means "O.B." which means "outboard" which when whipped up in glow plug form and applied to this boat means FUN!

Only stout-hearted old salts who have struggled with a conventional, old-time boat model can really appreciate the complete simplicity of "Obee" . . . but take it from us, this one you really can turn out in short order. Windows indicated by painting.









"OBEE"
R/C CABIN BOAT

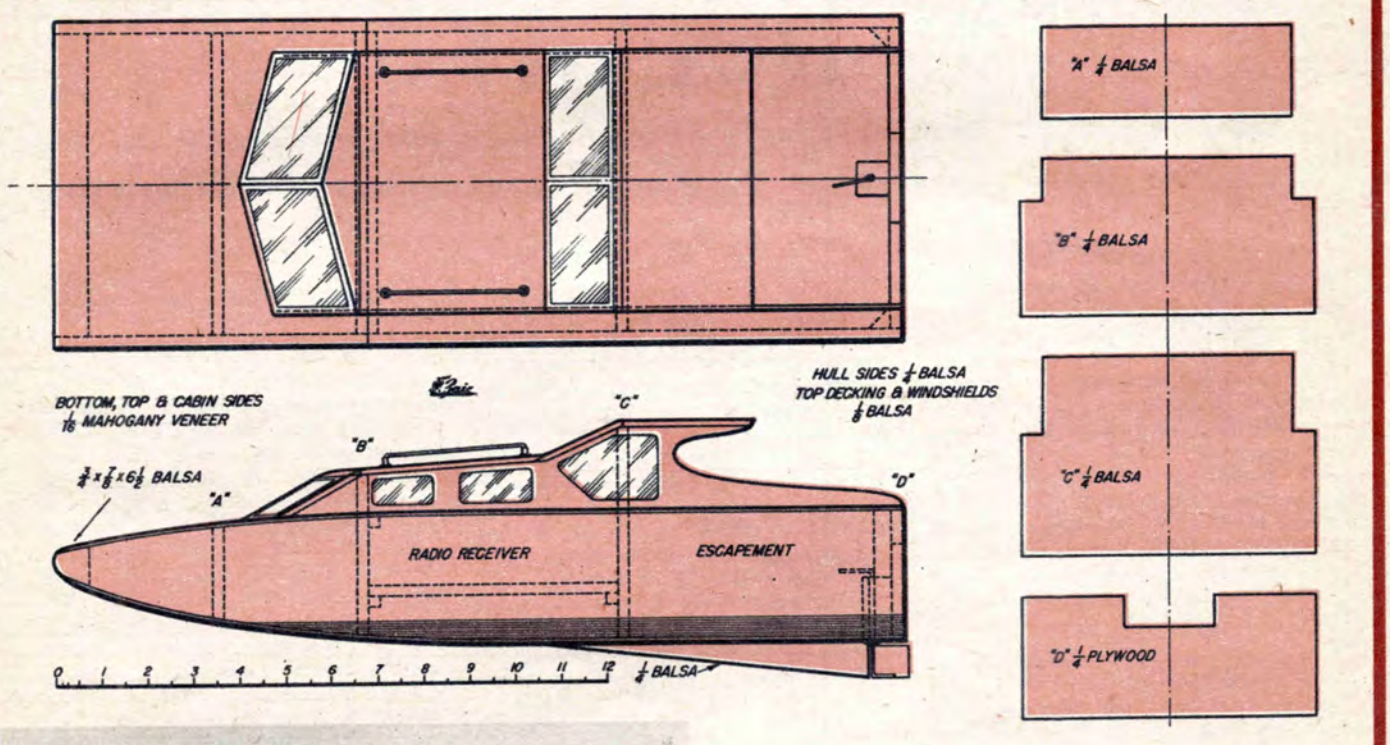
■ A grand new world of model power boating has been opened up by the glow-plugged miniature outboard engines. This model enables you to get goin' fast.

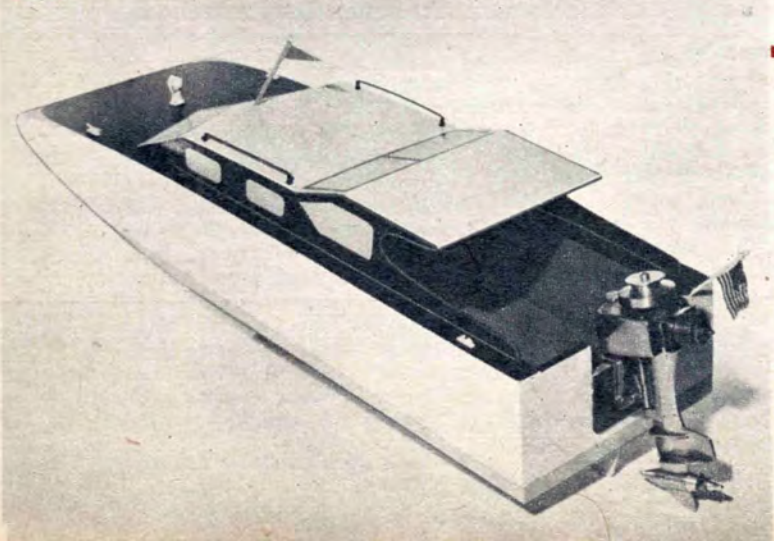
Even without radio control, powerplants like the Atwood or Allyn can be mounted on "Obee" and offset (they are hinged both vertically and horizontally) so your boat runs in almost any diameter circle. It's suggested that you rubber-cement some sponge rubber across the bow just in case you have any head-on collisions.

For operation without R/C you'll want an unbroken balsa keel. For radio control you install a small rudder as indicated on the side plan view; this connects with the escapement mechanism. Rough water tests indicated that the transom engine cutout could be lowered an additional ¼"; this is not needed if you operate only in smooth water.

Building sequence is as follows: cement sides to bulkheads (if you're to mahogany-stain the finished product keep all glue off exposed surfaces); glue in transom and bow block; cover bottom by cementing at nose first; allow to dry thoroughly, then finish cementing bottom, pressing framework down on sheeting; add cabin sides; then cabin roof (if boat is to be R/C'ed, roof between bulkheads B and C should be removable); top decking is added by gluing front first; when this is dry glue center and aft sections in place.

Sand thoroughly; use light mahogany water stain where desired; colored fuel proof dope goes where your artistic temperament dictates; clear butyrate dope overall.





Transom (D) on "Obee" is tilted in the pictures, straight on the plan. Boat was originally designed for an inboard electric motor, but when Allyn and Atwood announced their small glow plug outboard engines everybody had the same idea: here was a perfect boat for the new powerplants! So set your transom in upright per the plans. Note, too, cabin has been heightened; again, just follow the plans.

Full-size construction plans for "Obee" are in Group Plan #654A printed by Hobby Helpers, 770 Hunts Point Avenue, New York 59, N. Y. (50¢).

An "ATH" CAREER REPORT

THERE ARE DOLLARS IN DRAFTING

Drafting is: easy to learn . . . a semi-professional job that pays well . . . a stepping-stone to bigger and better things

■ One of the well paying semi-professional jobs in industry which has a bright future is drafting. Contrary to popular belief, little, if any, artistic talent is needed to enter this field. A high school education or equivalent, which includes normal arithmetic plus a little algebra and trigonometry—and one is ready to enter a drafting room.

Drafting fundamentals are usually taught in high school or evening school, and every public library has books available for home study. And you can teach yourself via correspondence courses.

What's the Pay?

Apprentice or junior draftsmen doing engineering changes and tracing start around $1.25 per hour. However, with time put "on the board" the rate goes up until it passes the $100 per week mark for forty hours' work. At present, an average draftsman with five years' experience earns between $90 and $100 a week, with higher rates possible.

Drafting is unlike many jobs which lead to a maximum of $75 or $80 a week. Every year's experience makes a man more valuable and can lead to greater income.

There is a saying in the industry that one never sees an old draftsman, and here is why—the experience gained acts as a springboard to supervisory jobs. Many an experienced draftsman leaves the board to become an engineer or to take over some responsible position.

Drafting offers its rewards to those who are interested enough to apply themselves. As an individual goes further into drafting, a course taken at night in mathematics or machine design, for instance, helps to move him ahead to earn more.

There are a baker's dozen different types of drafting. Just to name a few: mechanical, electrical, piping, structural, plant-layout, patent drafting, aircraft and ship drafting, technical illustration, etc. Take your choice! What interests you?

At first glance a picture of a drafting room looks like a maze of drafting boards, tables, and men. But look more closely, and you'll see that each man has a huge board to work with plus a large table behind him for keeping work on, called a reference board.

Good Conditions

Working conditions are ideal in most plants. The usual working clothes are slacks and white shirts with sleeves rolled up to leave hands free and active. Nationwide and even overseas drafting offer fine opportunities to alert young men and the pay is well above that of an unskilled-type job. Two weeks' vacation with pay each year, sick leave with pay and several paid holidays a year are all easy-to-take benefits. Some of the more ambitious have a set-up at home where they do part time freelance work for individual companies and magazines. Pay for such work is in the neighborhood of $3 per hour or more and is a source of extra income.

What Tools Needed?

The instruments used in drafting are the compass, large and small, adjustable protractor, scale (ruler), erasing shield, lettering guide and drafting brush. Each draftsman purchases extra equipment as he gains experience and finds a need for it. A standard book which is almost a must is "Machinery's Handbook," edited by Eric Oberg and published by Industrial Press, 148 Lafayette St., New York, N. Y. The cost is approximately $8. This book is a ready reference on general drafting, math tables, standard nuts, screws and fittings.

Well, it is as simple as that. The draftsman supplies his own tools while the company supplies the drafting board, needed pencils, paper, etc., and a comfortable place to work.

Remember, it is a poor engineer who has no knowledge of drafting. Often in "want ads" are positions open to men who can read prints and understand drawings. Anyway you look at it, drafting plays a big part in all manufacturing and a continuing flow of new products.

The drafting room's responsibilities are many. First, the creative thinking of engineers must be transformed into workable designs and recorded in the form of engineering drawings. Each new group of design drawings requires addi-

(*Continued on page* 73)

SCIENTIFIC ANNOUNCES THE

Exciting New

NORTH AMERICAN
F-82 TWIN MUSTANG

A DESIGNER'S
(and modeler's)
Dream
COME - TO - LIFE

The fabulous F-82 . . . first time as a control-line, fly-it-yourself scale model. It was 8 months in perfecting (on the drawing board and in test flights). NOW — you can own it! It's SLEEK . . . and TRIM . . . and — well, you be the judge. Picture yourself at the control lines of this baby. It flies like a dream. And it's a downright cinch to assemble (we've super-prefabricated all the parts). There's two (2) carved balsa fuselages! Airfoil shaped balsa wing! Two (2) formed plastic canopies! Two (2) pilots! Two (2) metal cowlings, 2 formed landing gears, die-cut balsa tail assembly . . . to mention but a few of the outstanding features. We tip our hat to Mr. Musciano for his excellent job. We're sure you will, too, once you've seen it . . . built it . . . and flown it!

$2.95

18" WINGSPAN
For Small Bore Engines
(.035 to .074)

POWER WITH
1 or 2
GAS ENGINES
TEST FLIGHTS PROVE THIS!

Same model pictured as night fighter-interceptor

WALTER A. MUSCIANO
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More Exciting Scientific Models
SEE NEXT PAGES

SEE THE FABULOUS F-82 AT YOUR DEALERS . . . SOON!

NEW!

PITT'S SPECIAL
LITTLE STINKER

SCOOP! Here's Betty Skelton's championship stunt flyer . . . never before at this low, low price. It's one of the snappiest, most colorful stunt flyers that ever took to the air. The completely prefabricated kit features: carved balsa fuselage, all the colorful decals, formd balsa wing, plastic pilot, Jim Walker's U-Control, etc., etc. — everything cut, formed or shaped for easy assembly. **2.50**

POWER WITH ANY SMALL BORE ENGINE (.020 TO .074)

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AMERICAN BOY
STUNT TRAINER
18" WINGSPAN FOR .020 TO .074 ENGINES

Here's our new, popular U-Control trainer . . . the biggest dollar's worth of model airplane in the whole wide world. It's a 100% complete — 100% prefabbed. BEGINNERS . . . Assemble it in "nothing flat," add your engine — and away you go! EXPERTS . . . you'll love this inexpensive profile job for your experimental work — for testing new flying techniques. **1.00**

NORTH AMERICAN
TEXAN AT6
18" WINGSPAN FOR .035 TO .074 ENGINES

An AIR TRAILS "Blue Ribbon" award model. It's our authentic scale replica of the world famous U. S. Air Force AT6 Trainer. The Navy calls it their "SNJ". Modelers everywhere call this exciting control-liner a real "thriller." The completely prefabricated kit includes: Jim Walker's U-Control, carved balsa fuselage, formed wing, cowling, etc. **1.95**

FREE Scientific Catalog . . . Contains all our exciting action models: Airplanes, Speedboats, Race Cars, Etc.

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AN: 17½" For .020 to .074 Eng.
luxe U-Control model. 100% mplete—100% prefabbed . . . th carved balsa fuselage, metal wl, rubber wheels, pilot, etc.

LITTLE MERCURY $1.50
SPAN: 18" For .039 to .074 Eng. Carved fuselage model — at this sensational low price. It's completely prefabbed . . . easy to assemble, easy to fly. Jim Walker's U-Control.

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SPAN: 17½" For .020 to .074 Eng. Deluxe U-Control model of the U.S. Army's famous "Hawk" fighter. 100% complete . . . 100% prefabbed. Contains carved balsa fuselage, etc., etc.

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For .020 to .049 Engines
Imagine! This carved fuselage biplane "beauty" for only $1.50. It's semi-scale. Features Jim Walker's U-Control, all prefabricated parts.

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SPAN: 18" For .020 to .074 Eng. Famous escort fighter model. Completely prefabbed. Features carved balsa fuselage, formed balsa wing, etc., etc.

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SPAN: 18" For .020 to .074 Eng. An economically priced U-Control model. Easy to build and fun to fly. Prefabbed parts include: carved balsa fuselage & wing, etc.

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LENGTH: 14" For .020 to .074 Eng. Full speed ahead for thrills with this "beaut" of a speedboat. Prefabbed model is 100% complete—carved balsa hull, brass fittings.

RIVIERA **$3.50**

For "½ A" Eng., Electric Motors Authentic Chris-Craft replica with a 12" carved balsa hull and brass metal fittings. All parts finished. Completely prefabbed model.

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"½ A" Eng., CO_2, or Elec. Motors Features our exclusive aeronautical fin and rudder design. Prefabbed model has a 12" carved balsa hull, brass metal fittings, etc.

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SPAN: 18" For .039 to .099 Eng. Deluxe speed, sport & stunt flyer. Features carved balsa fuselage, formed hollow balsa wing, etc., etc. — all satin smooth finished. U-Control.

MONOCOUPE

18" WINGSPAN FOR .035 TO .074 ENGINES

Every beginner will love our scale model of America's favorite private plane. It's so easy to build . . . easy to fly! The prefab kit includes: carved balsa fuselage, formed metal cowling, Jim Walker's U-Control, etc., **1.50**

BOEING P-26A

18" WINGSPAN FOR .020 TO .074 ENGINES

Our popular P-26A . . . in honor of the U.S.A.F.'s first all metal pursuit plane. This highly colorful model brings to life all the beauty of the prototype. It's a terrific control-line stunt or sport flyer. The super-smooth prefab kit contains a carved balsa fuselage, formed metal drag ring, etc., etc. **2.95**

MODELERS:
SEE THESE SCIENTIFIC MODELS AT YOUR FAVORITE HOBBY SHOP

If no dealer is available, add 10¢ (postage & packing) to cost of model

BE SPECIFIC SAY—

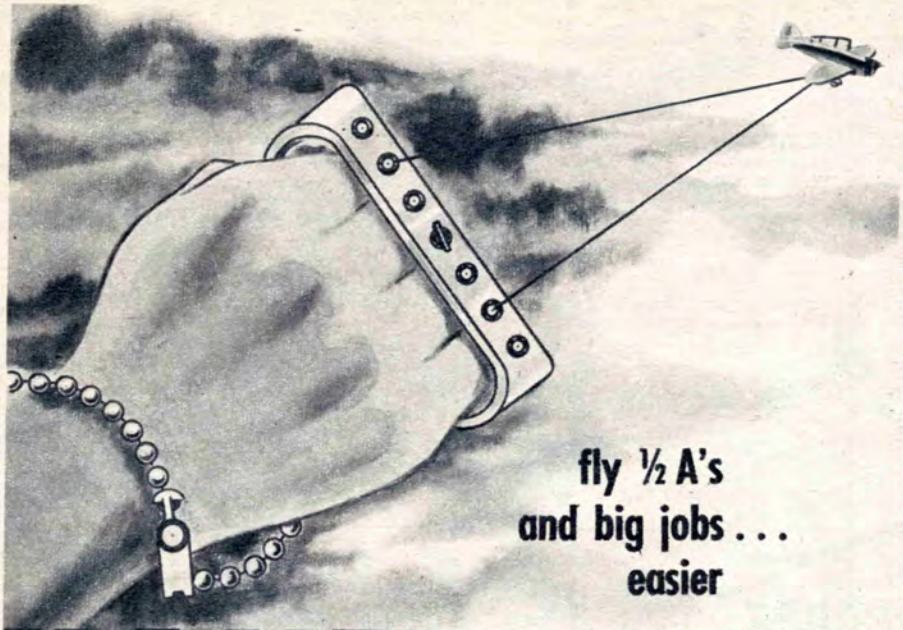
SCIENTIFIC

Mr. Stanley Ziemba, Jewett City, Conn., sent us this photo of his Scientific P-26A. Stan says: "... It's a beaut and flies like a dream."

NEW!

LITTLE BUCKEYE

You're in store for exciting action with this sleek speedboat. It's prefabbed for super-easy assembly. Just wait till you see it in action . . . it's positively sensational! Power it with any "½ A" engine, electric motor or Jetex. The big-value kit features a fully carved balsa hull, brass metal fittings, etc., etc. **1.95**



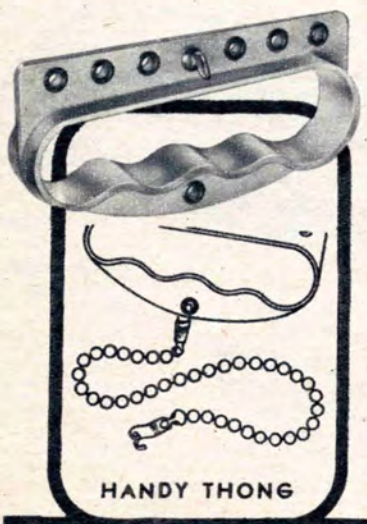
fly ½ A's
and big jobs . . .
easier

HANDY·REEL

with separable handle for maximum flight sensitivity and control

HANDY REEL including handle
$2.95

Handy reel conveniently stores the lines . . . connected to the handle and ready for thrilling flight! Because of its large diameter there is no possibility of kinking the lines. Reeling in and out is smooth and flawless! Made of durable Styrene plastic, with metal reinforcements.



HANDLE without reel 75
You'll get the full "feel" of your plane and maneuver with thrilling new sensitivity and control with the Handy Reel Handle! Delicate control line adjustment can be made at the forward edge of the handle. The handle grip is shaped to the contour of the hand to give you the full comfort and delicate awareness of every motion of your plane. Ruggedly constructed of high impact Styrene, with metal reinforcement at critical points, Handy Reel Handle withstands tremendous pulls and punishment.

HANDY THONG 75
Safety accessory . . . adjustable; locks handle to wrist, avoids loss of ship or injury to spectators. Required by AMA for contest flying.

Ask your dealer for Handy Products; if not in stock please give name of dealer and mail your check or money order to:

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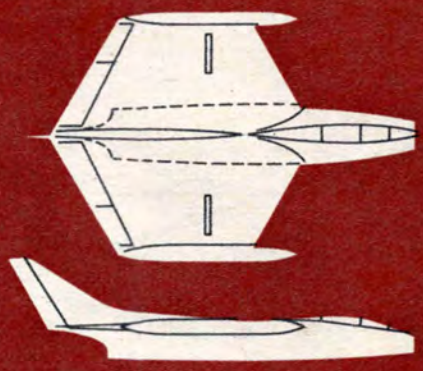
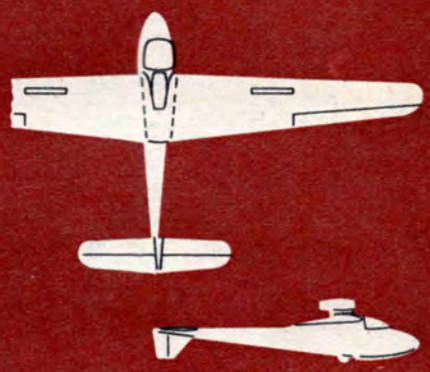
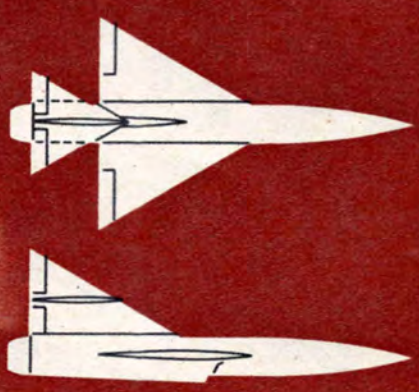
"ATH" AIRMEN OF VISION

AIRCRAFT

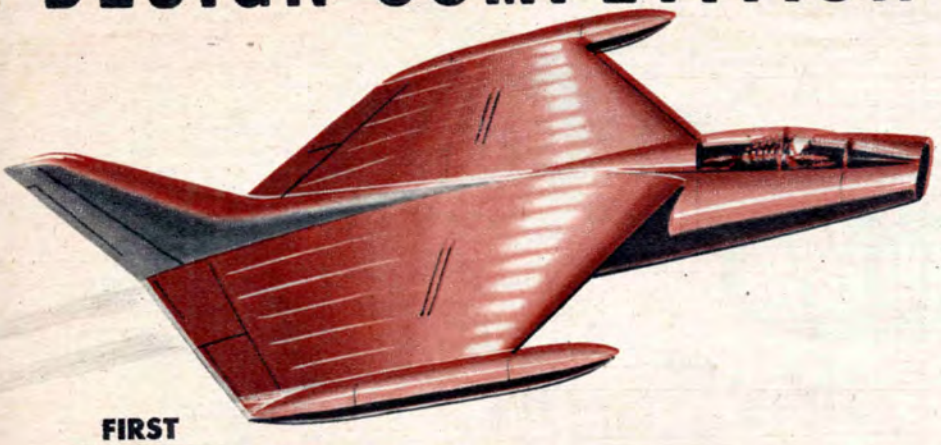






Rules governing this competition are as follows: Three-view sketches of envisioned aircraft will be required. These should be not less than 8½ x 11 inches for the entire three views. Give sketches of complete airplane or space craft in three-quarter front and rear positions. Photos of a model of proposed design may be included. Informa-

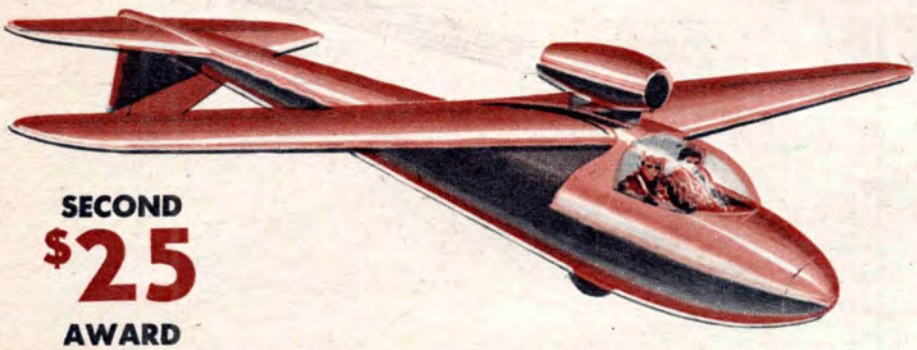
DESIGN COMPETITION



FIRST $50 AWARD

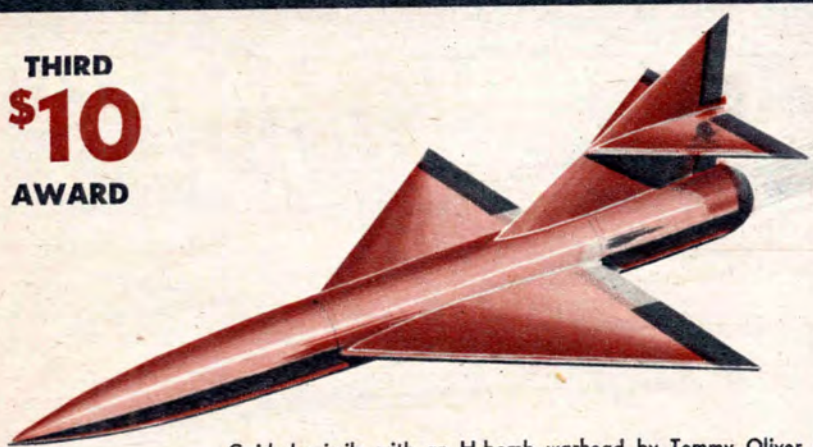
"Poly-Gone" is twin-jet interceptor fighter by Stanley M. Juras of Uniontown, Pa. Polygon shape of wing tip containers house radar-guided missiles, or fuel if necessary; pilot in prone position. Two 10,000 lb. thrust engines.

Auxiliary powered sailplane by Gerald Mentone of Brooklyn, N. Y. 200 lb. thrust light turbojet engine permits craft to take off without tow. Rudder located below fuselage out of searing jet stream. Span is 52'6", top speed with jet 150 mph.



SECOND $25 AWARD

THIRD $10 AWARD



Guided missile with an H-bomb warhead by Tommy Oliver of Denver, Colo. Powered by one turbojet engine of 6,000 lbs. thrust. Missile is 30 ft. long, can fly at supersonic speed.

tion on powerplant(s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed. The design may be of any type; space craft, commercial, military planes (fighters, bombers, troop transports), planes for private flyer and sporting or racing airplanes. Entry each month judged most practical or of greatest significance will receive $50; $25 for second place and $10 for third. Mail entries to Airmen of Vision, c/o Air Trails HOBBIES for Young Men, 304 E. 45th St., New York 17, N. Y. The editors regret they cannot enter into any correspondence on submissions.

HANDY BOY

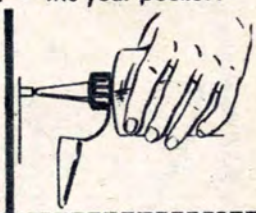
PRESSURE FILLS ALL TANKS AND FILTERS AS YOU FUEL!

The huge response has enabled larger production and a...

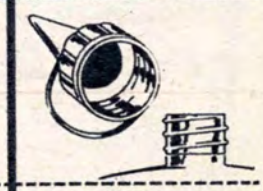
NEW LOW PRICE $1

Squeeze ... and it fuels • Gas is always clean — Supply always visible • Holds 4 oz. • fits your pocket!

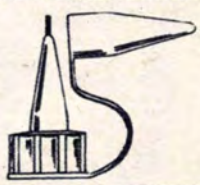
Unbreakable, fuel-proof, compact squeeze-type plastic container and metal-tipped filling head fuels all tanks.



Special built-in strainer filters out dirt and impurities — assures entry of clean gas into tank.



Pressure-cap for sealing Handy Boy against evaporation loss or spillage; permanently attached.



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JETFIRE GLIDER

10¢

sleek jet-type flyer

SKY-STREAK MOTORPLANE

25¢

PLASTIC PROP

contest rubber motor

SKY-STREAK MOTORPLANE

PLASTIC PROP

25¢

contest rubber motor

50¢ FLYING MODEL CONSTRUCTION KITS

CESSNA BIRD DOG

Wing Span 16" to 20"

These accurate and authentic scale models are especially designed for long stable flights and flat glides. The light tissue and balsa stick construction is rigid enough for many hours of flying. Each model in this series has been flight engineered by Guillow model experts. Plastic nose cowls and propellers included in each kit. Plastic canopies included with Bird Dog, T-28 Trainer and Chipmunk.

GUILLOW

ELEVEN MODELS TO CHOOSE FROM

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Monocoupe
North American Trainer T-28
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Cessna L1 Bird Dog
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They're all GUILLOW Designed

- Sleek Beauties
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- Great Flyers

LOCKHEED P-38 LIGHTNING

$100 FLYING MODEL CONSTRUCTION KITS

24" Wing Span

CHOICE OF 6 MODELS

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N.A. P-51 Mustang
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If not available at your Hobby Dealer send direct to factory adding 25¢ packing and postage in U.S.A., 40¢ outside U.S.A.

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CAPT. DICK SCHUMACHER
Western Air Lines Pilot and
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Actual flying has taught me what fuels should do and how engines should perform. So Gold Seal is used in my models. The engines start easier run smoother ...deliver terrific power and all-around performance! Model Builders interested in WINNING are switching to Gold Seal everyday. Take my advice try it!

"East to West... It Outperforms the Rest"

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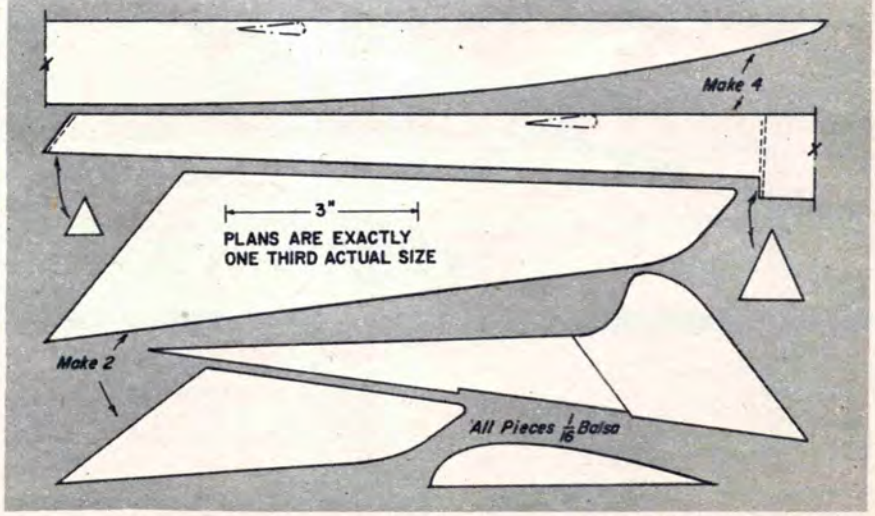

more thrust _ full h.p. _ less torque
PAYS OFF IN PRIZES AND SUPERIOR FLYING PERFORMANCE!

TORNADO PROPS WON BETTER THAN 2 TO 1 OVER NEAREST COMPETITION!

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Use Tornado propellers and notice the difference. They are engineered to give you superior performance. Every Tornado propeller has a CLARK-Y air foil section which is the most versatile of all and delivers the highest thrust to power ratio. Add to this the sleek thin blades, extra smooth finish and TRUE PITCH and you have a propeller engineered to deliver the most thrust with less torque allowing the engine to develop full horse power for maximum performance from your engine and your fuel.

Get a real flying thrill—in your next contest or for pleasure. Mount a TORNADO PROPELLER on your engine.

Consult prop chart at your dealer for exact size and pitch Tornado Prop to use with your engine.

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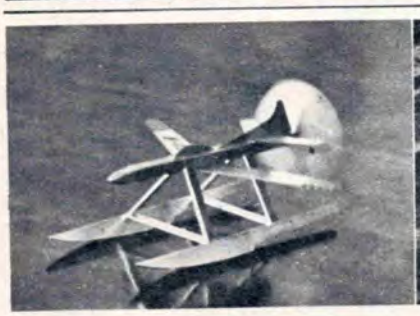
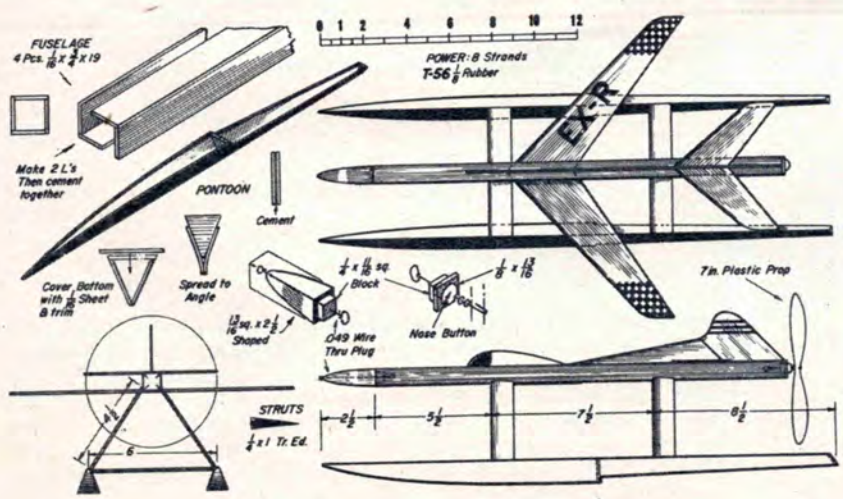


■ There's nothing small about this speedster nor is there anything slow about the way it zips across ice (above) or water! Pontoons, like most other parts, are made from 1/16" sheet balsawood—these are 24 inches long. So successful were the original test models, giant-size Water Skimmers 48" are now operating. Lubricate T-56 rubber motor with tincture of green soap (from any drug store) and pack in the turns with a winder while stretching rubber.



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Demand for our engineering graduates exceeds supply. *Effective placement!* Study in this world-famed college founded 1884. Quarters start June, Sept., Jan., March. *Approved for Korean Vets.*

Bach. Sc. degree in 27 months

Personalized practical instruction. Wind tunnel, structural and dynameter testing included. Also degrees in Mech., Civil, Elec., Chem., Radio (TV), Adm. Engineering; Bus. Adm., Acct. Extensive beautiful campus. Modern buildings and well equipped labs. Mature students. Prep courses. Modest costs. *Mail coupon now to Jean McCarthy, Director Admissions, for Catalog and View Book.*

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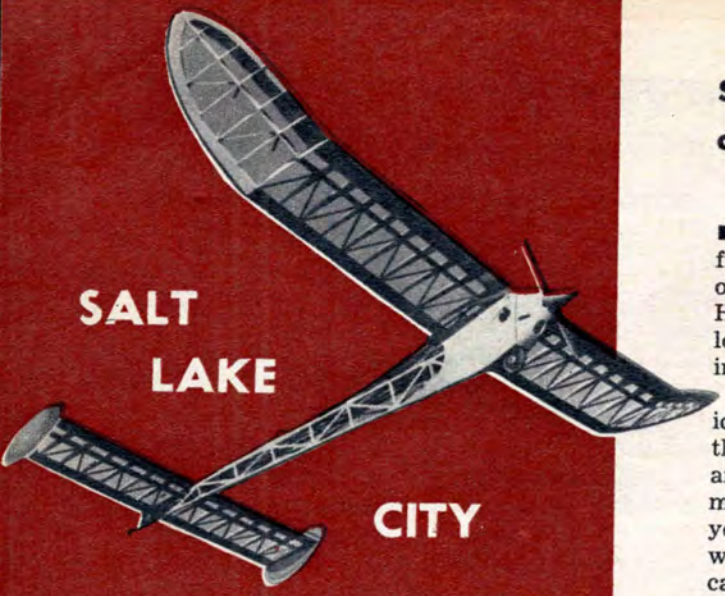


SALT LAKE CITY Sadie

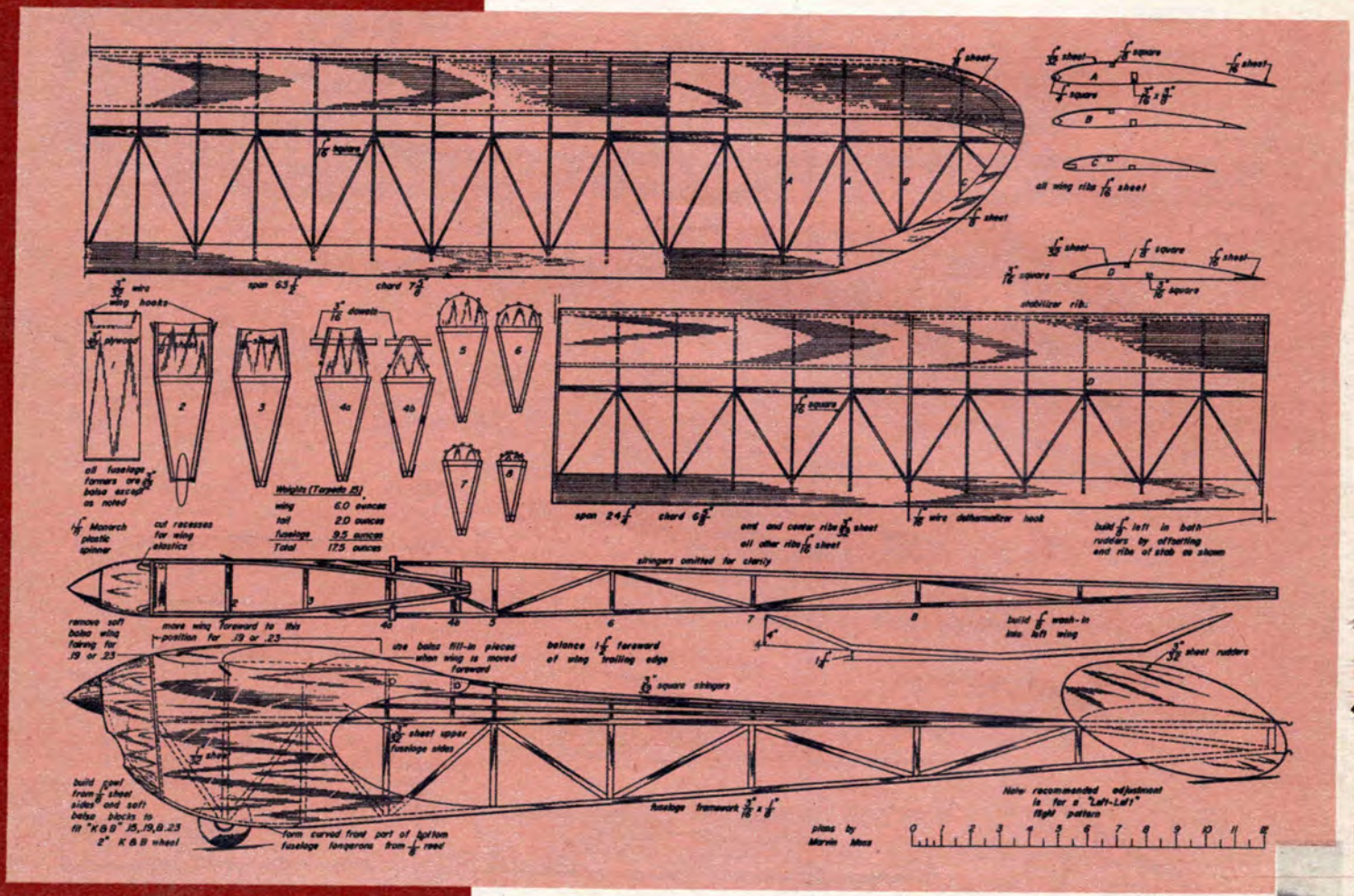
She's an outstanding contest free flight that can be flown in FAI gas, U.S. "A" or "B"

■ When America won the FAI International Championship in free-flight gas at Cranfield Airdrome last summer, the popularity of this relatively new class with American modelers was assured. However, it meant still another size model to be built. The logical solution would be an FAI design that could also be flown in Classes A and B as well by merely changing motors.

While primarily an FAI ship, *Sadie* was designed with this idea in mind. With a Torp .15 up front she weighs 17.5 ounces, the required FAI minimum. Add a Torp .19 in place of the .15 and the weight becomes 20.5 ounces, which just meets the AMA minimum for Class A. When flying Class B with the Torp .23 you will have to add 2.5 ounces, but even with this 23 ounce weight *Sadie* is still a high-performance contest ship easily capable of 6-minute maximums if properly adjusted.

The design is similar in many respects to Stan Hill's fine "Amazon 400" except that the following changes were made after careful testing with 4 different models:

1. A Gottingen 602 wing section was used because this section gives very low drag under power and still gives high lift during the glide.


span 63½
chord 7⅞
span 24
chord 6⅜
Weights (Torpedo .15)
wing 6.0 ounces
tail 2.0 ounces
fuselage 9.5 ounces
Total 17.5 ounces
all wing ribs 1/16 sheet
stabilizer rib.
1/16 wire dethermalizer hook
end and center ribs 1/32 sheet
all other ribs 1/16 sheet
build 1/16 in fit in both rudders by offsetting end ribs of stab as shown
stringers omitted for clarity
more wing forward to this position for .19 or .23
use balsa fill-in pieces when wing is moved forward
balance 1 1/4 forward of wing trailing edge
build 1/16 wash-in into left wing
1/32 sheet rudders
1/16 square stringers
1/32 sheet upper fuselage sides
fuselage framework 3/32 x 1/16
form curved front part of ignition fuselage longerons from 1/16 reed
plans by Marvin Mees

Full-size working drawings for constructing Salt Lake City Sadie are a part of Group Plan #654A available from Hobby Helpers, 770 Hunts Point Ave., New York 59, N. Y. (50c)

BARNEY J. TAFT, 32, S. L. C. Sadie designer and author of this article, started air-modeling in '33 with 5' Corben Super Ace (still flying) powered by Mighty Midget engine; he scaled plans up from rubber kit. Barney has won awards in free flight and R/C; placed 5th in towline glider at last Nats. President of Ute Aeromodelers; now a food broker; served 4 years with Marines in parachute corps, made 14 jumps, came out as captain; wife's name is Terry, young Tafts are Wendy, 5; Kit, 3 and Nancy, 2. Has worked for newspapers, started the Ute's excellent "Salt Flat Sentinel" club paper.

2. A long tail moment arm was used to give a slower, flatter glide and a more stable climb pattern.

3. A wing area of 438.1 square inches was used with a 36% stab. These areas were found to be just about perfect for the Torp .15 and yet not overpowered with the Torp .19 and .23 when the weight is increased to 20.5 and 23 ounces respectively. (The high thrust line shoulder wing type of design permits the use of considerably more power without looping tendencies than would be possible with a pylon type of design.)

4. The model is carefully cowled and streamlined to permit maximum power and glide efficiency.

The design was originally tested in Half-A form and won three first places during the '53 season, making at least one 6-minute flight in every contest in which it was entered. The small version was then designed to take the Torp .15, .19, and .23. In its first contest it was flown with the Torp .19 and romped off to an easy first in Class A with a time of 12:32. Several flights have been made with the Torp .15 and performance is excellent, with several flights in excess of 4 minutes being made in calm air.

The construction is the lightest and strongest possible and is actually quite simple even though it may appear complicated at first glance. Start with the wing by cutting ribs from medium hard 1/16" sheet balsa. Wing is built in the usual manner except that a hollow trailing edge is used which is light, strong and enables a more accurate airfoil contour. The trailing edge is formed from two pieces of 1/16" by 1" medium hard sheet balsa. Bevel the rear edges so as to form a sharp edge when they are glued together. Pin down the bottom trailing edge piece, blocking up front edge about 3/32" to meet undercambered ribs.

After pinning down main spar glue all ribs in place (except those at polyhedral joints) and then glue top trailing edge piece in place.

Complete building details available on the full-size plans.

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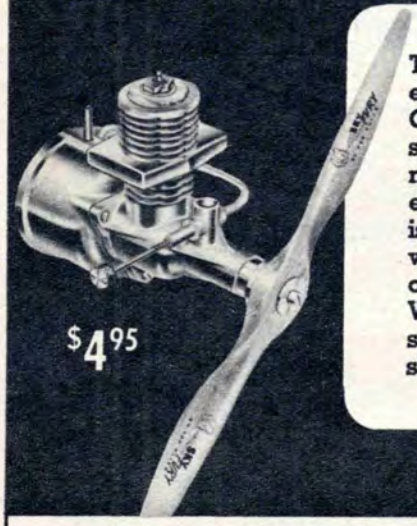

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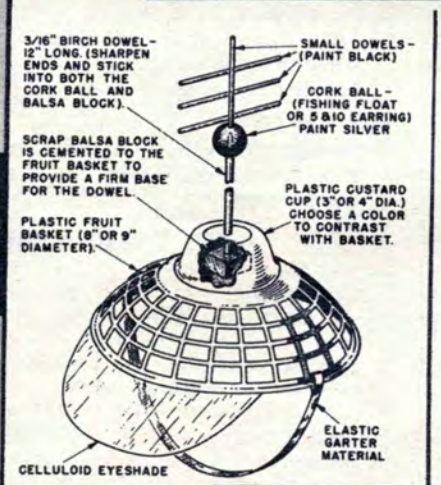
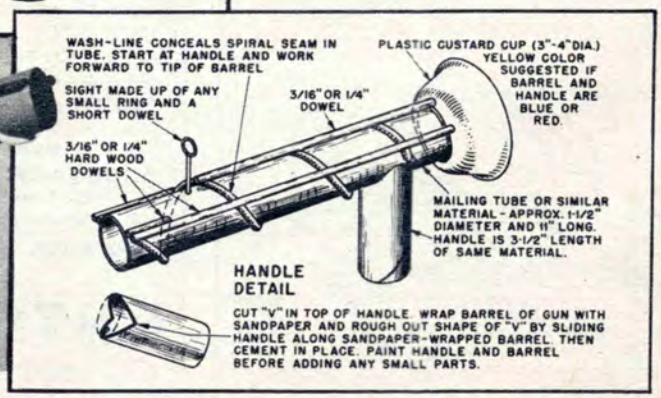

3/16" BIRCH DOWEL - 12" LONG. (SHARPEN ENDS AND STICK INTO BOTH THE CORK BALL AND BALSA BLOCK).
SMALL DOWELS - (PAINT BLACK)
CORK BALL - (FISHING FLOAT OR 5 & 10 EARRING) PAINT SILVER
SCRAP BALSA BLOCK IS CEMENTED TO THE FRUIT BASKET TO PROVIDE A FIRM BASE FOR THE DOWEL.
PLASTIC CUSTARD CUP (3" OR 4" DIA.) CHOOSE A COLOR TO CONTRAST WITH BASKET.
PLASTIC FRUIT BASKET (8" OR 9" DIAMETER).
ELASTIC GARTER MATERIAL
CELLULOID EYESHADE

CASH FOR YOUR IDEAS!

Projects presented here have a two-fold purpose: they can be made at home and sold to raise funds for your school club, church group, or they can be used to delight some youngster—brother, son or neighbor. The theme of this section is DON'T BE SELFISH WITH YOUR SHOP! So you have lots of nice tools and wonderful materials with which to work—don't forget to make something now and then to keep the family or girl friend happy. We'll pay $25 for each original idea used here. Send photos of completed item, rough sketches, description to ATH's "MMWH"—we'll do the rest if yours is selected.


WASH-LINE CONCEALS SPIRAL SEAM IN TUBE. START AT HANDLE AND WORK FORWARD TO TIP OF BARREL
PLASTIC CUSTARD CUP (3"-4" DIA.) YELLOW COLOR SUGGESTED IF BARREL AND HANDLE ARE BLUE OR RED.
SIGHT MADE UP OF ANY SMALL RING AND A SHORT DOWEL
3/16" OR 1/4" DOWEL
3/16" OR 1/4" HARD WOOD DOWELS
MAILING TUBE OR SIMILAR MATERIAL - APPROX. 1-1/2" DIAMETER AND 11" LONG. HANDLE IS 3-1/2" LENGTH OF SAME MATERIAL.
HANDLE DETAIL
CUT "V" IN TOP OF HANDLE. WRAP BARREL OF GUN WITH SANDPAPER AND ROUGH OUT SHAPE OF "V" BY SLIDING HANDLE ALONG SANDPAPER-WRAPPED BARREL. THEN CEMENT IN PLACE. PAINT HANDLE AND BARREL BEFORE ADDING ANY SMALL PARTS.

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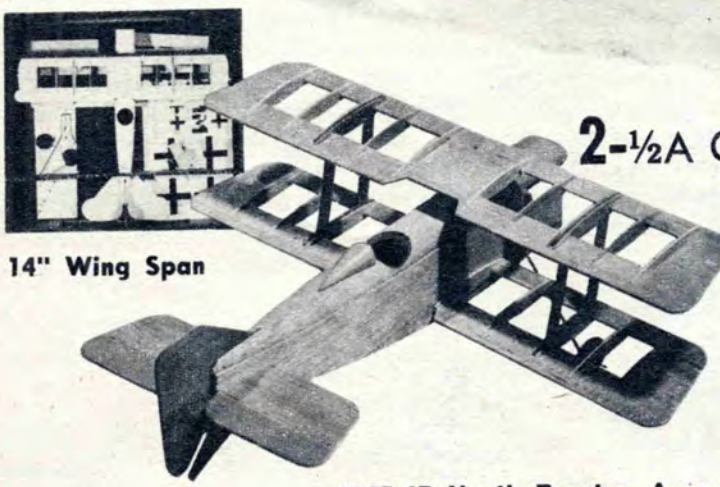

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Hobbies-in-Action

UPS and DOWNS...

Alert N. Y. "Mirror" photog caught R. W. Cory and his F4B-4 Navy carrier entry at critical moment. Model has just made pass at U.S.S. "Small Fry." Our radio control friend there at left is really up in the air over his launch (by John Schneider).

Snapped any good action pictures of models and/or hobby fans in action? "ATH" pays $10 for each one used. Send entries to "Hobbies-in-Action" Dept.

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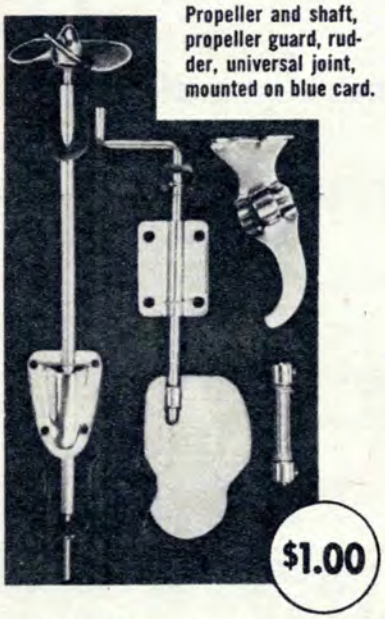

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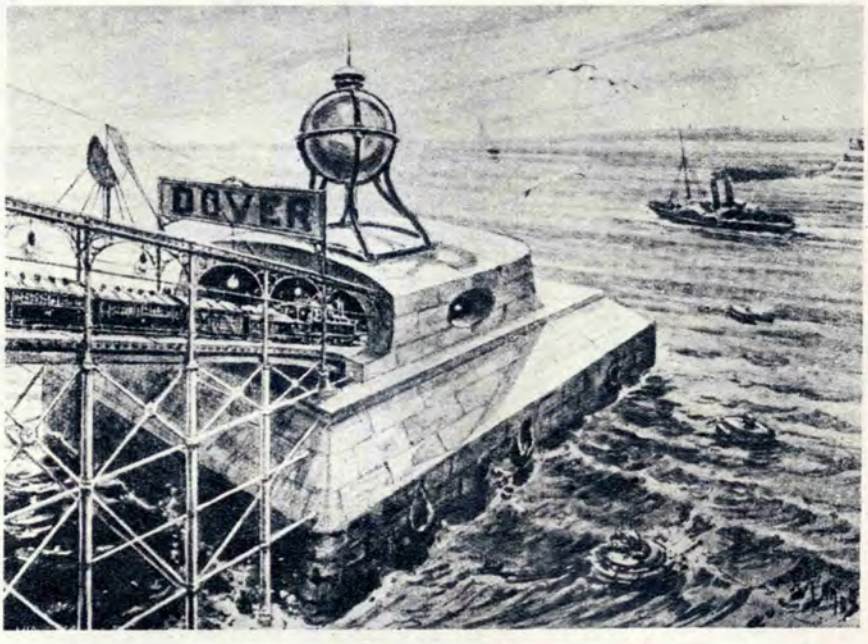
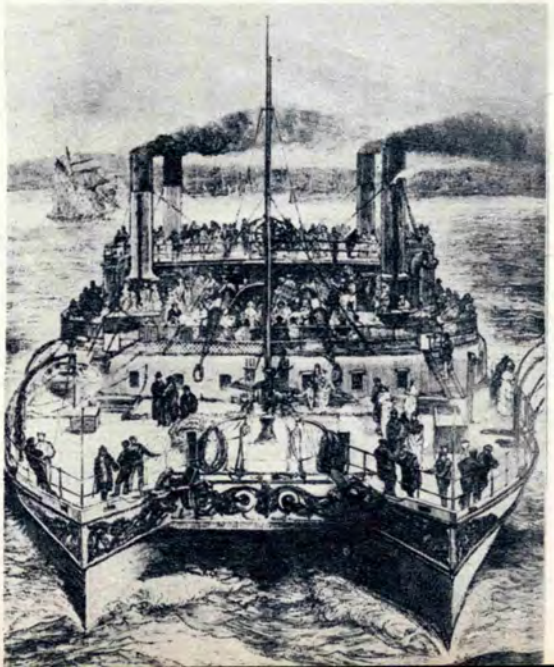
Transportation Topics

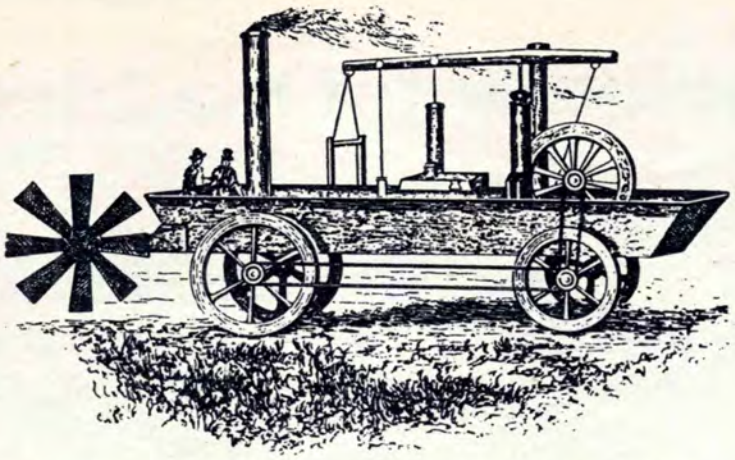
Going from one place to another and getting there the quickest and most convenient way have always been of prime importance to man, the biped. In the antediluvian era he quickly learned that by running he arrived wherever he was going faster than by walking. However, he soon noticed that several types of animals were suitable to carry him on their backs, thus saving wear and tear on his legs. Rivers and lakes, being free of such impediments as mountains and forests, also furnished convenient means of transportation. As Homo Sapiens progressed and learned to utilize tools his inventiveness led to carts and dug-out canoes, and since waterways existed long before roads, it was natural that population centers grew along river banks. As trade developed, transportation became more and more vital to the survival of humans, and it was from this necessity that trains, steamboats, automobiles and finally airplanes evolved. . . . Some transportation aids worked; others did not. All helped.



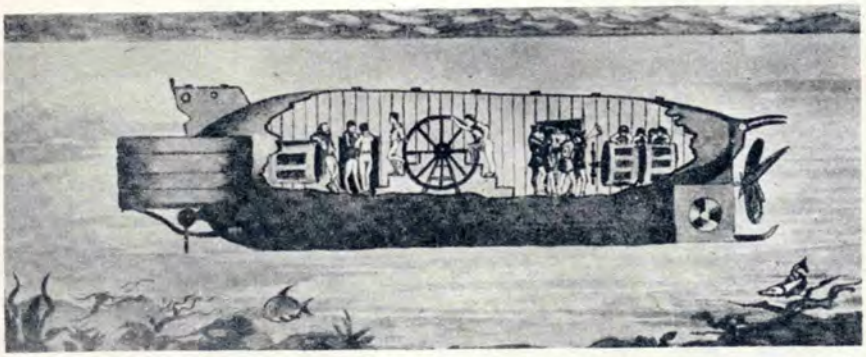
Calais-Dover railway tunnel underneath the English Channel was contemplated in 1906 to expedite travel between London and Paris. Project never materialized: high cost, technical trouble, and invasion bogey.



Catamaran-like steamship Castalia was built in England in 1874, especially designed to cross turbulent English Channel. Twin hulls gave ship exceptional steadiness in rough water. She was 290 feet long, 60 feet wide, capable of accommodating 1000 passengers. But boat was slow, public speed-conscious. Soon retired.



This steam-driven amphibious vehicle called "Oructor Amphibilos" was designed and built in 1905 by Oliver Evans of U.S. Ran in Phila.



Russian submarine built by Bauer in 1855 was operated by means of man-powered treadmill-propeller system. During coronation of Tsar Alexander II it remained submerged for four hours under the Baltic Sea with band of four musicians who serenaded while crew treaded.

Helicopter powered by compressed air motor was proposed by a New York aeronautical engineer in 1874. Though basically it had right idea, rigid rotor system defeated flight.

North Pole always held fascination for explorer-minded men. In 1877 British Commodore Cheyne proposed to reach it by means of three balloons rigidly coupled together and trailing ropes which would prevent the spheres from rising higher than 500 feet. Records do not reveal progress made.

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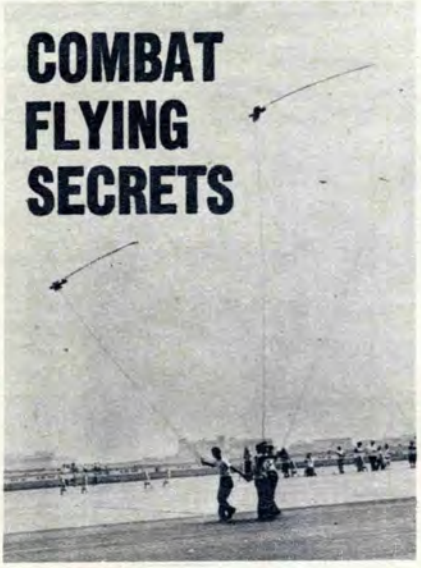

Photo courtesy N. Y. Daily Mirror

Training or practicing for combat when all you are going to do is outfly your opponent through a series of unplanned maneuvers may sound like a wasted effort, but because it is unplanned your opponent's flight (at least the first time) is unpredictable, and it will be necessary to react instantly and correctly in response to his maneuvers. Unlike speed and stunt, combat is not a flight against known conditions, the object of which is to surpass a competitor's performance of known patterns or speed. In combat you are competing in an entirely unpredictable event at a speed where you don't have time to think out a move —*you have to react instinctively!*

Here are a few pointers to work on in developing this instinct:

1. *Line length.* No matter how close your plane appears to be to your opponent's, you will not cut his streamer unless your hand is relatively close to his. If all your evasive maneuvers fail, a quick step backwards will have the same effect as shortening your lines; a cut from his lines doesn't count.

2. *Overhead flight.* Your opponent probably can't catch you in a tight turn overhead; if he is smart he won't try. But you're a sitting duck for a short wing-over, since your position equalizes the line length and all he has to do is line up on your streamer. If you are flying high and your adversary drops down, drop down behind him.

3. *Flying above and behind.* This is the natural position to make a pass from, but you will look foolish if you don't use it properly. As you close the gap horizontally, close it vertically at the same time to where you will be able to follow and maintain

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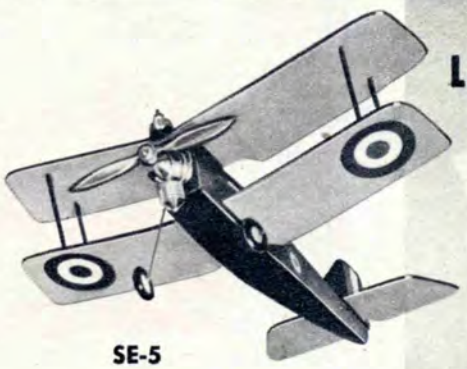

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your advantage—make short passes. If you are matched against an opponent who stays high above you and makes long passes, try gradually increasing your altitude and he will probably go up a corresponding amount. At this point a sudden vertical dive will cause him to overshoot and give you a chance for a pass from underneath, or it will at least force him to loop and break away.

4. *Forced landings.* If you have a poor engine run and find you haven't a chance, don't stay up there and play tow target, letting the other contestant pile up a score you can't top—fly into the ground and break your prop. (No landing gear helps here.) You have five minutes to change props, adjust your engine at a new setting, and take off again. *Don't exceed one lap under eight feet in doing this.*

5. Last, but very important—when the opportunity presents itself, study the other contestants flying before being matched against them. You will often find an habitual evasion, attack, or maneuver to expect, and of which you can take advantage. At the same time avoid developing one pattern of flight that will enable an opponent to anticipate your moves.

—Earl F. Witt

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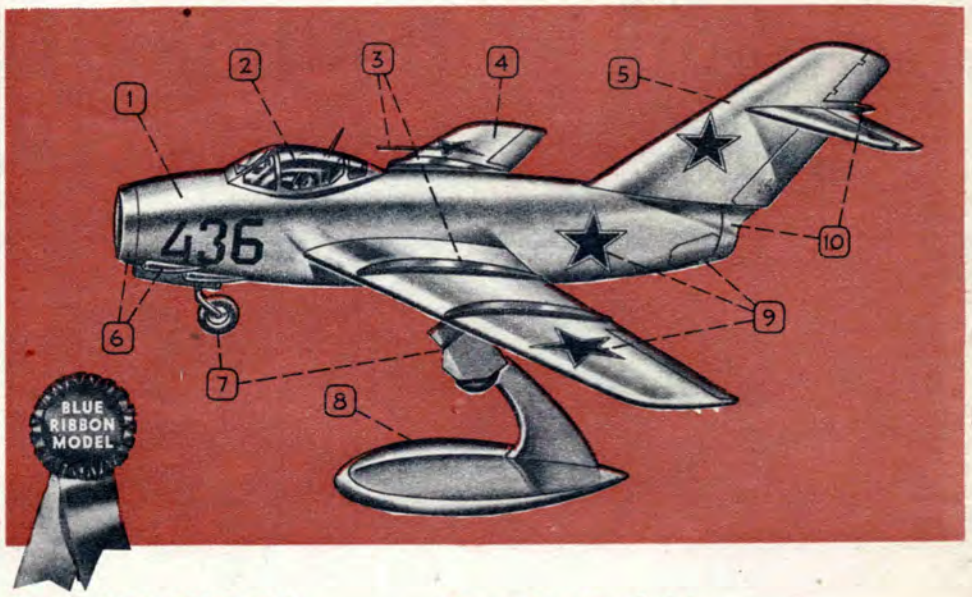


Superkit MiG-15

■ Among the new offerings by Monogram Models is this precise scale Russian jet fighter. All the difficult details are ready-finished in plastic, making the assembly job an easy one. There are 23 of these plastic pieces including pilot and cowl.

Pre-shaped balsawood parts make up the main components such as the fuselage, wing and tail surfaces. This is an excellent example of how both balsa and plastic can be combined to produce an effective scale model.

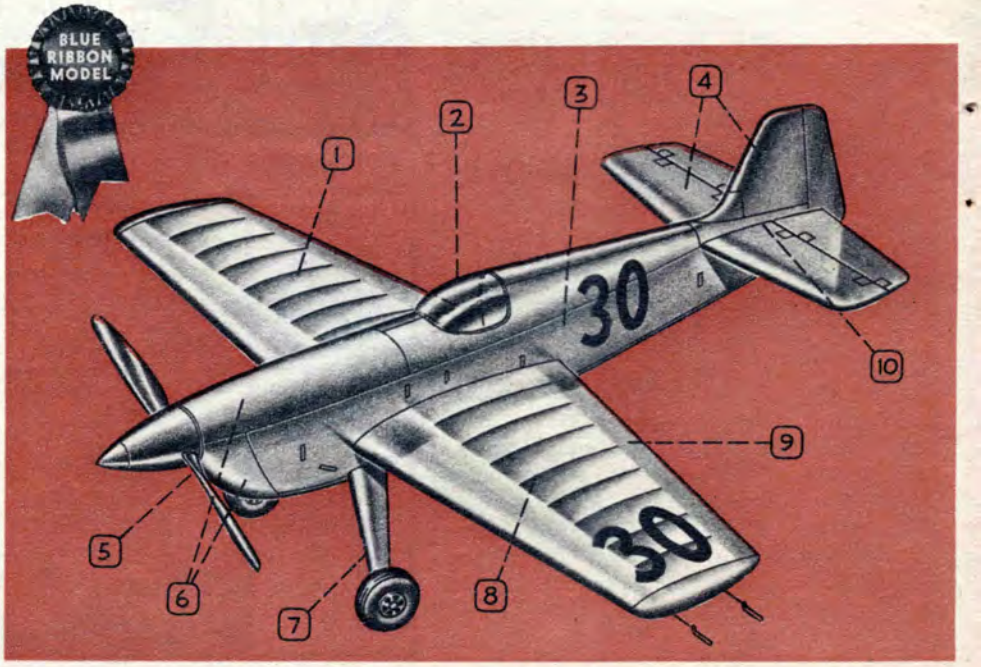
Parts are: 1) turned balsa fuselage; 2) scale pilot and clear plastic canopy; 3) plastic pilot tube, air flow "fences;" 4) partly shaped balsa wing halves; 5) die-cut balsa tail parts; 6) plastic intake and gun housings; 7) plastic gear leg assemblies; 8) streamlined plastic pedestal mount; 9) authentic full color decal insignia; 10) plastic orifice, and fairing.

Veco's Redskin

■ From the Henry Engineering outfit which produces the Veco line of kits and motors comes the Redskin, a team race-sport combo prefabbed kit of unusually pleasing lines. This low-winger spans 31 inches; wing area works out to a maneuverable 170 square inches. Clarence Lee was the designer.

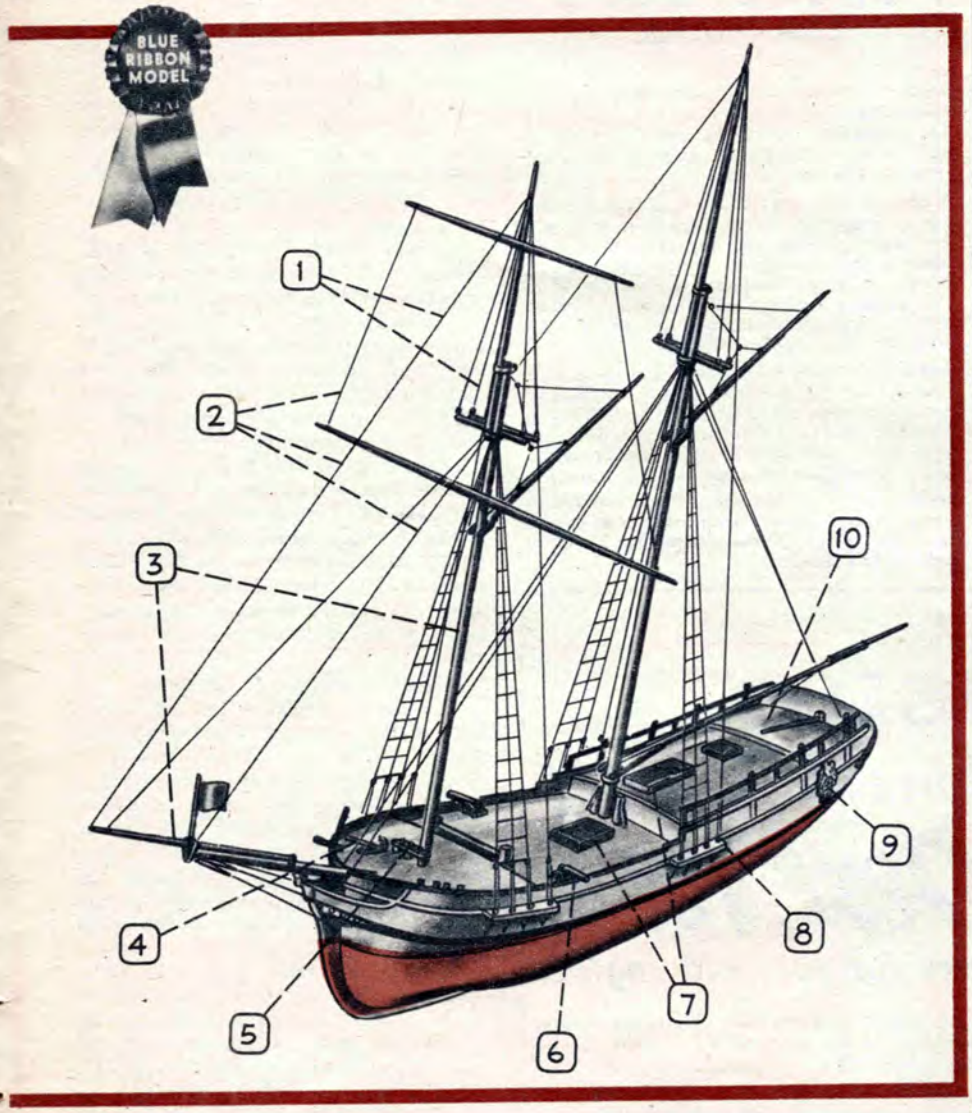
Finished 25-inch-long model weighs 22-24 oz.

Features are: 1) Silkspan wing covering material included; 2) finished cockpit canopy; 3) die-cut balsa fuselage sides, formers; 4) complete die-cut balsa tail group; 5) .19 to .31 cu. in. engines recommended; 6) balsa cowl blocks, plywood firewall; 7) formed steel wire gear legs; 8) die-cut balsa wing ribs; 9) shaped and notched leading, trailing edges, spars included; 10) hardware for heavy-duty control system supplied.



"Sultana"

■ Shelf-scale models of sailing ships have always been very popular, and this one should be no exception. The Sultana, an American-built boat, was launched in Boston, around 1767. She was later purchased by the British Navy for use as a dispatch boat. The model is one of a large line—which includes many other old-timers in sail, and a few steamships, too—put up in kit form by Model Shipways. Completed model measures 17" in length, is 15" high, and is to a scale of 3/16" equals one foot.



All wooden parts in the kit are hardwood—there is no balsawood.

For a proper representation of the original ship, the transom must be cut away, and replaced with one made from two layers of mahogany veneer (furnished). Incidentally, as with most other kits in the Model Shipways line, this one may be had with a mahogany hull at extra cost.

It takes a good many small and intricate fittings to make a really authentic-looking old-time ship, and this kit is just loaded with them. There are fourteen envelopes full of such metal parts as anchors, guns, hatch covers and gratings, belaying pins, and many, many others. Then there are dozens of tiny wooden blocks, and microscopic deadeyes.

Dowel rod is furnished for masts and spars, and you get brass wire for such use as railings.

Three full-size plan sheets show rigging and hull; one of them gives interior details of the original ship. Printed assembly instructions, sketches and a photo of the finished model further aid the builder. Also in the kit is a copy of the Model Shipways 32-page catalog.

Features are: 1) detailed rigging diagrams included; 2) three weights of rigging material supplied; 3) hardwood masts, bowsprit, booms; 4) cast metal anchors; 5) scale eyebolts and belaying pins; 6) six swivel guns, eight cast metal deck cannon; 7) cast metal grates supplied; 8) scale wooden pulleys; 9) cast ornaments, figurehead, other detail parts supplied in kit; 10) fully machine-carved hardwood hull, ready for sanding.

VIPER AIR BOAT

Perfectly shaped parts assemble to 10" overall length. Realistic? You bet! Shows live action, too, after you've installed ½A engine. PRICE, less engine & spinner, only $1.95

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TWIN-TUBE RECEIVER

With North American's famous printed circuit. Complete with mounting base, tubes, potentiometer, weighs less than 1½ oz. PRICE, less relay and batteries $24.95

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Complete (less batteries) $29.95

1½ volt "A" supply
135 volt "B" supply
Measures 3¼x3⅞x5¾
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Sensitive Relay
Weighs less than ½ oz. $7.50

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NEWPORT NEWS, VIRGINIA

AUSTIN CRAFT FORECASTS fine flying weather!

Before you take to the air this Summer take a close look at these Austin-Craft Specials for active modelers . . . Austin-Craft offers more of everything you need. For instance . . .

A-C PUMPS
Ever-working, Never-failing, Heavy-plated.
½ pt. or pt. ea. 65c
½ pt. or pt. with screen filter ---69c
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2¾" Streamlined for Free Flight and "U" Control. Aluminum hub. Weight 2 oz. plus, per pr. -- $1.50

FUEL-OFF TIMER
½A, A, B, and even C Motors! Glow Plug and Diesel. Wgt. ½ oz. All Metal $1.95
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A-C BATTERY BOXES
Large, med., Pencell, 40c ea. 4-Pencell, 3-volt, 60c. 6-volt (for radio control, etc.) 75c ea.

Needle Valves
Flex -- $1.00 ea.
Uni-Flex $.75 ea.
Universal $.49 ea.
Extension, small--$.25 ea.
Extension, large--$.25 ea.

TINY FLEX NEEDLES
K & B--$.39 ea.
Baby Spitfire $.39 ea.
Wasp and McCoy $.39 ea.
O. K. -- $.49 ea.
Spitzy, Royal Spitfire $.49 ea.

AUSTIN CRAFT A-C
431 S. VICTORY BLVD. BURBANK, CALIF.

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New! Clearasil Medication

'STARVES' PIMPLES

SKIN-COLORED

HIDES PIMPLES WHILE IT WORKS

Doctors' clinical tests prove this new-type medication *especially* for pimples really works. In skin specialists' tests on 202 patients, 9 out of every 10 cases were cleared up or definitely improved while using CLEARASIL.

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America's largest-selling specific pimple medication... because CLEARASIL has helped so many boys, girls and adults. GUARANTEED to work for you as it did in doctors' tests or money back. 59¢ and 98¢. At all druggists. Get CLEARASIL today. (Available in Canada, slightly more.)

SPECIAL OFFER. Send name, address and 15¢ in coins or stamps for generous trial size to Eastco, Inc., Box 12DJ, White Plains, N. Y. Offer expires July 8, 1954.

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PRECISION

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top money for your old engine!

To clear the flying fields of worn out, balky old engines—to give thousands of modelers a fresh start with a top quality engine, we make this sensational offer:

Mail your old engine to us, no matter what make, size or condition, even though some parts are missing! We will allow you $5.00 for it in trade towards a brand new FORSTER front rotary valve engine. Your old engine and only $6.20 will bring you the latest and best model F-29 or F-31 FORSTER engine, made by the oldest established model engine manufacturer in the U.S.A. and known the world over for outstanding precision, performance and fuel economy.

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MODEL F-29 or F-31
$11.20

it's trade-in time for a better deal!

YOUR ENGINE IS WORTH MORE ON A NEW "FORSTER"—NOW!

FORSTER BROTHERS 8 E. LANARK AVE., LANARK, ILL.

where quality comes first

AIR NOTES

SO-4050 Vautour French fighter-bomber of tremendous versatility. This two-place version is designed for all-weather duty.

SONIC BOOM may prove effective weapon against light structures, says North American Aviation . . . heavier the aircraft more potent the shock wave; F-100, dived supersonically, shattered light timbers, broke windows. Test pilots keep 5,000 ft. from other aircraft when flying supersonically.

NAVY's VTO (Vertical Take Off) Lockheed XFV-1 fairly conventional with tapered wing, X-type tail has castering wheels; Convair XFY-1 is delta with two vertical fins, top and bottom . . . both planes powered with 5,500 shaft hp Allison T-40 turboprops swinging 4-bladed contra-rotating prop. Planes take off, land vertically.

DOUGLAS A3D twin jet carrier bomber named "Skywarrior." . . . CESSNA awarded $1 million by Air Force for T-37A twin-jet trainer production. . . . CIVIL AIR PATROL pilots flew 12,290 hours in 1953 on search and rescue missions. . . . COST to train a Navy pilot in 1930 was $19,000; present "price," $70,000.

TEN Fletcher FD-25 Defenders, light ground attack airplanes, built in Japan, ordered by State of Cambodia, Indo-China. . . . AVRO-CANADA at work on new RCAF jet fighter designated CF-105. Will have paper-dart shape and 1,200 mph speed. . . . EXTRA fuel cells of nylon expected to outlast an airplane developed by AiResearch Manufacturing Co. Less apt to rupture in belly landing, extend range by as much as 500 miles.

ELECTRIC POTENTIAL between the earth and the ionisphere, about 100,000 volts, now being measured by super-sensitive "aerial electrometer" developed by Minneapolis-Honeywell. Carried by balloon to 100,000 feet, it registers current differential. Information important for long-range communication, may affect interplanetary flight.

Leduc O-21, French ramjet experimental high-speed plane, has prone cockpit. The powerplant develops 15,000 lbs thrust.

Conestoga

(*Continued from page* 34)

handling. As for length overall, the Conestoga is three inches shorter than the sedans and about seven inches shorter than the coupés while affording more interior space.

Still available is the L-head six-cylinder 85 horsepower Champion series. On these the body and chassis are identical to the Commander V-8 series; while economy and initial cost are more advantageous, the performance as is to be expected drops off greatly, both in traffic and on the open road. We'll take the Commander V-8, but would prefer faster steering (it's available with power steering) and fewer than four turns to raise or lower a window.

Worth mentioning is the fact that Studebakers have very little blind spot at each windshild corner when the wipers operate. Brakes are much improved over '53 models with an increase on Commander's rear brakes from 9 to 10 inches diameter and on front an extra ¼ inch to give 11-inch diameter; they are also slightly wider.

Drafting

(*Continued from page* 54)

tional detail, drawings of the component assembly drawings. Working from the designer's complex layout and assembly drawings, detailers and junior draftsmen prepare these detail drawings. Next, each drawing must be thoroughly checked. After final checking and approval, many prints of each drawing must be made by the blueprint department and distributed to Production Planning, Purchasing and Manufacturing Departments, so that material may be processed and production schedules set.

Another major responsibility of the drafting department is the job of keeping thousands of drawings up to date with revisions required by design improvement and improved manufacturing procedures. This means processing dozens of drawings each week and distributing hundreds of copies to company departments and sub-contractors.

The foregoing applies to all the leading industries in America. They all need trained draftsmen.

—ALBERT E. CHRISTEN

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NEW! Authentic Scale Models — Completely Pre-Fabbed!

LUXURIOUS CHRIS-CRAFT 63' MOTOR YACHT
Kit B-11M Length 40" Beam 10¼"
For Class A, B & C gas engine(s) or electric motor(s)

FOR POWER OPERATION, SHELF MODEL, OR RADIO CONTROL

$18.95

Deluxe 108 pc. Scale Marine Fittings Set B-11F $7.50.

Actual photograph of model built from kit.

Chance-Vought CORSAIR F4U-1

U.S. NAVY CARRIER FIGHTER
Kit C-9 Span 36" Length 27¾"
For Class B & C engines

$5.95

NEW '54 CATALOG—WRITE NOW! Send 10c in coin to Dept. AT6

SEE THESE OTHER STERLING MODELS

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Howard Pete	C-2	5.95
Mr. Mulligan	C-3	4.95
Waco	C-4	5.95
Polish Fighter	C-5	5.95
SE 5	C-6	5.95
Ryan S-T	C-7	5.95
Fokker D-VII	C-8	5.95
Ring Master	S-1	2.95
F-51 Mustang	S-2	2.95
Yak-9	S-3	2.95
Space Master, Jr.	S-4	2.25
R. C. Piper Tri-Pacer	FS-1	10.95

POWER BOATS	Kit	Price
Richardson 27' Cruiser	B-1	$5.95
Higgins 17' Speedster	B-2	4.95
Chris-Craft 47' Buccaneer	B-3	7.95
Century Resorter '20'	B-4	3.25
Century Sea Maid '20'	B-5	2.95
Chris-Craft 32' Cruiser	B-6M	9.95
Deluxe 34-pc. scale marine fitting set for Kit B-6M	B-6F	3.50
Chris-Craft 50' Catalina	B-7M	11.95
Deluxe 66-pc. scale marine fitting set for Kit B-7M	B-7F	4.95
Century Sea Maid '20'	B-8M	7.95
Deluxe 35-pc. scale marine fitting set for Kit B-8M	B-8F	3.95
Higgins 26' Express Cruiser	B-9	3.95
Harco '40' Deluxe Cabin Cruiser	B-10M	10.95
Deluxe 64-pc. scale marine fitting set for Kit B-10M	B-10F	4.50

MARINE DRIVES	Price
½ A (⅛" dia.) Gas Marine Drive	$2.95
A (⅜" dia.) Gas Marine Drive	3.95
BC (¼" dia.) Gas Marine Drive	3.95
Electric Marine Drive	2.25

Marine Fittings Also Available *Individually*. Ask Your Dealer.

MOTORS—FREE OF EXTRA COST

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- √ **New motor worth $7.95 plus two of our surprise premiums included free of extra cost with all orders totaling from $19.95 to $29.94.**
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Atwood .049 (U.C.)	4.50	McCoy .29	11.95
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Atwood .051	5.50	McCoy .29 R.M.	14.95
Bluestreak .65	22.90	McCoy .60 R.M.	22.50
Cameron .09 M	9.95	Ohlsson .19 or .23	11.95
Cameron .09 M—2 SP.	11.95	Ohlsson .29 or .33	13.95
Cameron .19 L	9.95	O.K. Cub .049S	4.95
Cameron .19 R	9.95	O.K. Cub .074	5.95
Cameron 19—2 SP.	11.95	O.K. Cub .099	6.95
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Fox .19	12.50	O.S. .29	14.95
Fox .29 or .35	14.95	Sky Fury .049	4.95
K&B .02	5.50	Space Bug .049	6.95
K&B .035	3.95	Space Bug Jnr. .049	2.95
K&B .049	6.75	Thermal Hopper .049	6.95
K&B .09 or .15	10.95	Veco .29 or .31	14.95
K&B .19 or .23	13.95	Wasp .049 (U.C.)	5.70
K&B .29 or .32	13.95	Wasp .049 (F.F.)	5.95
McCoy .09	7.95		

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E. D. .15 B.B.	15.95
Javelin .09	7.95
McCoy .049	5.95
Mills .045	7.95
O.K. Cub .075	7.50

27.255 MCS. R/C

Citizenship Transmitter	34.95
Citizenship Receiver	34.95
Babcock Transmitter	39.95
Babcock Receiver	29.95
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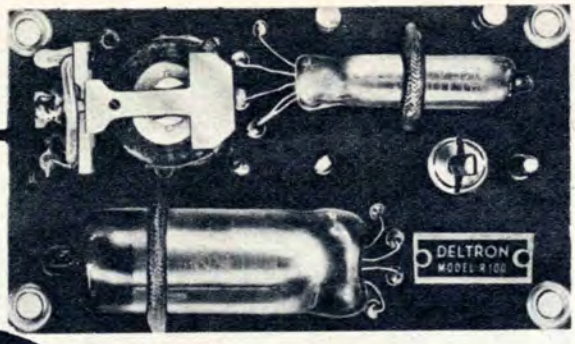
"Leaders Since 1933"

R-100 RECEIVER
Shown actual size:
3"x1⅝"
Weighs less than 2 oz.
including plug



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NEW CIRCUIT gives safe control at great distances. Smaller. Lighter. Rugged-built for long life.

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EASIEST TUNING. only one adjustment. No meters needed!

COMPLETE, FULLY-ASSEMBLED of new top quality components and thoroughly tested. **$24.95**

DELTRON TRANSMITTER T-100 Lightweight, hand-held unit is only 3"x5"x7". Long-range, 3-watts plus! Has telescopic antenna, micro-action keying button, radiation indicator light. Rugged. Dependable. Complete with tube and crystal **$29.95** (less batteries)

Write Today. 24-hour Service on All Orders
TERMS: Cash with order or ⅓ with order, balance COD
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DEALER INQUIRIES INVITED

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New! WORLD'S LARGEST GAS MODEL BOMBER B-25

67" Span. Length 49". "U" Control, Radio Control, or Free Flight

This 1" scale model can't be told from the real North American B-25 Bomber. Features of the construction set are 3" scale rubber tired alum. disc wheels, 4¼" alum. cowls, planked type balsa fuselage, ready cut tail and rudder balsa, alum. guns, all parts, and full size drawing. For easy handling of this model, the outer wing panels are removable, reducing the wing span to 30". Two OK 14 or 23" type motors can be used. Const. set, postpaid..... **$20.00**

9' TAYLOR CRAFT GAS MODEL

9 foot span. Can use Radio control. Set has 36 ready cut wing ribs, cut plywood body formers, 16" carved prop, tail wheel unit, 2 full size plans, printed balsa, silkspan, etc. Uses "C" type motor, single, twin, or 4 cyl. motor. Set without motor or wheels, postpaid..... **$17.50**
Extra pair of 4½" airwheels, $3.00

Grumman-F3F1

32" span. 1" scale. Const. set. Rubber driven...**$4.00**

Curtiss F11C4

32" span. 1" scale. Const. set. Rubber driven..**$4.50**

VOUGHT F2G GAS MODEL

41" span. U Control B or C Motor. Scale model of 1949 Thompson Trophy winner. Set has 2½" scale rubber tired alum. disc wheels 4¼" aluminum cowl, body planking, moulded, clear plexiglas cockpit enclosure, plastic spinner, etc. This is one of the finest equipped models in the world. Const. set..... **$7.00**

BOEING PT17 GAS

45" Span. Can use 5 cyl. M5 motor to scale or B or C type motor. U control. Set has scale rubber wheels and all spec. parts, ready cut wing ribs, tail wheel unit and wheel. Const. set.. **$9.95**

Add 25c for postage. Catalog—10c coin

MINIATURE AIRCRAFT CORP.
83 Low Terrace, Staten Island I, N. Y.

Under Control

(*Continued from page* 11)

Ontario, Calif., have changed name to The Buzzards; club has expanded to other fields. Brownie has moved to 129 N. Oak St., Chino.

Technical Section. Dick Schumacher (6638 Encino Ave., Van Nuys, Calif.) has come up with an idea as to why we have some of these mysterious spin-ins after the engine cuts, when everything had been going fine under power. Many of us have seen or experienced this, and usually blame it on the fact that the escapement or actuator stuck, after the engine vibration ceased. Brother Schumacher has been in the same boat, but now advances the idea that it has nothing at all to do with malfunctioning of the control equipment—he feels it might be an aerodynamic fault. The reasoning behind this is simple; after the engine stops, the lack of slipstream over the tail surfaces seriously reduces the longitudinal stability of the plane. Now if the flyer tries a sharp turn, or lets the ship get into a spiral, the recovery may be very slow, and this coupled with the fact that the pilot gets a bit panicky and pushes the button frantically might seal the fate of that particular airplane.

Commercial Notes. A totally enclosed proportional actuator is marketed by Southwestern R/C Supply Co. (Box 7177, Houston 8, Texas). Unit has two windings brought out to separate terminals; may be used on voltages from 3-9 with various degrees of power or with single battery on 3-6 V. for light ships. Weighs 1.7 oz., each coil has about 37 ohms. About $5.50. Concern will make resonant filters for audio tone use on special order.

An efficient little battery motor offered by Kinder Co. (2210 12th Ave., So. Milwaukee, Wis.), $1.50. Will run at good speed, gives good power on 1.5 V.; draws about .15 A with no load, weighs 1.4 oz. Ball-bearings, plastic case, double permanent magnets.

Electronic Model Engineering (6127 Alta Ave., Baltimore 6, Md.) has 4-tube, 7 oz. superhet receiver, $29.95 with relay; smaller 5-tube model using subminiature tubes, $49.95. This concern sells plans for these receivers, plus several others, transmitters, power supplies. They handle Babcock line of receivers.

Ace Radio Control (Box 301, Higginsville, Mo.) sells a kit for Mini-Mac receiver with info sheet giving hints on use of receiver, winding your own quench coil, use of different tube, etc. High resistance actuator, intended for use with 2-tube receivers, eliminates sensitive relay, comes in kit with instructions, $2.50. Ace markets kits for A.T. 3A4 transmitter and basic Mac II transmitter.

New R/C book from England has much of interest to U.S. builders. By G. Sommerhoff, titled "Radio Control of Model Aircraft," has hard cover, 164 pages, gives elementary electrical and radio theory, tells how to make relays, escapement and actuator, transmitters and receivers, complete control systems. Contains much useful material on model plane installations, trouble shooting etc. Recommended for beginner in R/C. $3.98 from Gull Model Airplane Co. (10 E. Overlea Ave., Baltimore 6, Md.).

Hobby-Model World

(*Continued from page* 16)

Contest for Model Gliders (the "Nordic" competition) at Odense June 24 to 28. The U.S.A.M.A. is permitted to enter one 4-man team; models can be proxy flown if team members can't get to Denmark. Individual winner gets the Swedish Glider Cup, the winning team receives the Daumerie Cup.

City of Brotherly Modelers. That's West Allis, Wis. LaVerne C. Garman, who runs a radio and hobby shop at 8214 W. National Ave., unfolds the wonderful story: 51 members in U-control Modelplane club; in *city-owned* park six circles are provided plus car-parking area; club provides liability insurance of $100 to $200 thousand; flying area is fenced to keep spectators at safe distance; dues for adults are $2.50 per year and cover *all members of a family*, those under 18 pay 75c a year; Mr. Garman runs a contest *every* Wednesday and Sunday. Wednesday for students (through high school); Sunday for all. Merchandise certificates are awarded in each category.

Need Engine Parts? Then here's a man you should know: H. A. Royse of Harry's Hobby House, 7204 S. Western Ave., Los Angeles 47, Calif. He has a goodly number of parts for current and ancient engines, glow plug, diesel and ignition. Also, he would like to hear from any ex-mfrer of engines with parts still lying around. Harry will add such scarce items to his engine parts stock. He may be your friend in need.

Speed Stuff. Frank Stone of Dallas passes along data on Texas air-model speed record trials. "Two phenomenal events happened in Dallas," reports Frank. "California weather with Oklahoma dust thrown in for the smog effect —that was #1; #2 was a new Class C open speed mark (pending) of 160.51 set by Leland Morton, from Dallas.

"Three trial dates were set up. To the first one Morton brought his new speed ship for its first flight. That flight broke yours truly's record with a speed of 155.4 mph. As Morton was not one of the regular speed boys, everyone tended to view this affair with raised eyebrows. A senior, Ken Hale, turned in a pending Class B record of 127.25 mph.

"Weather for the second go-round was windy, but for the final trials it was dusty and different. Leo Holliday turned in 155.38 mph with his monoline .60 ship to get things off to a fast start. Leland retaliated by breaking his earlier performance with 156.05 mph. The weather was 80 deg. F., dustier, but reasonably calm and dry. When Morton flew again around 4 p.m, he pulled the plugs and his speed jumped to 160.51 mph.

"There was no knocking this time for the watches were within 0.1 sec of each other. Besides, Guy Rogers and I both timed him at 163 but we were not considered official timers.

"We were all trying to beat him; my best time that day was 157.28 mph. Again Ken Hale upped his senior record

(*Continued on page* 90)

New Lil' Rocket
HALF-A CONTROL LINE MODEL
AN AIRPLANE ANYBODY CAN FLY

Rugged Plasticized Balsa Wing
Gleaming Plastic Fuselage.
BUILT IN AUTOMATIC PILOT MAKES IT EASY TO FLY Try It... You Can Fly It
Pops Out Of The Box Ready To Fly
7.95
Complete With Engine, Control Stick and Line

LIL' ROCKET Kit. K. D., Less Engine, But Complete With Control Stick and Control Line, Only $1.95

NEW PLASTIC BODY GLIDERS

AEROMIC STREAK
High Performance Glider

29¢
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GLIDEO PLANE
Control Line Glider

Complete With Control Stick and Control Line
50¢

VICTOR STANZEL & CO.
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IT'S EASY TO BUILD
Ideal MODELS
16 INCH AQUA PAL Skiff

Completely prefabricated With die cut oar blades, panels, bow plates, seats, etc. Two moulded balsa sides. Cast oar locks and horns. Picture plan.
Only $1.50 COMPLETE
AQUA PAL SKIFF With an electric outboard motor
AQUA PAL SKIFF With a tiny electric motor
CATALOG 10¢
SEE YOUR HOBBY DEALER
IDEAL MODELS
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The BRAVE

A Control-Line Sport Model and Basic Stunt Trainer, Extremely easy to assemble and even easier to fly.

Wingspan 37", Wing Area 295 sq. in. For Engines .19 to .35 Cu. In. Displ.

1954 'Veco' .29 & .31 Engines With 'TEMPERATURE CONTROLLED CLEARANCE' The latest engineering development in miniature engines. TRIED . . . TESTED . . . PROVEN to give GREATER ALL AROUND PERFORMANCE than ever before achieved. Convert your old engine.

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Members fly all types of model planes; meet at local Dodge-Plymouth garage. Emblem designed by Earl Cayton, well-known plane contestant. Contact man is Don Santee, 1759 S. Commercial, Salem.

Chicagoland R/C Modelers
Chicago, Ill.

Group organized in '48. President is Leo Galinski, W9SVE, a radio engineer. Meetings 1st Friday of month at Gompers Park Field House (8 p.m.). Club has regular Chicago flying site.

Air-istocrats G.M.A.C.
Lawrence, Mass.

This group goes in for all types of air-models. R/C is swiftly gaining foothold. Members have taken "hardware" at M.I.T. contests. Bob Banister is secretary; HQ at 288 Park Street, Lawrence.

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$25 cash award for each trick picture used here. Submit as many different entries as you wish; none should be less than 4 by 5 inches, and preferably 8 by 10" glossy prints. We will return all photos submitted, but cannot accept responsibility in case of loss or damage. Pictures may be of one-dimensional subjects (people, inanimate objects, cartoon caricatures, etc.) or can be table-top full-dimensional scenes. Amateur and professional photographers stand an equal chance. Keep the subjects humorous and/or unusual.

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- NO MOVING PARTS
- SAFE, CLEAN, SCIENTIFIC MODEL FUEL

JETEX JET ENGINES SPECIFICATIONS	#35	#50	#50B	#150	#600
ENGINE WEIGHT	.15oz.	.2oz.	.2oz.	.73oz.	1.6oz.
FUEL WEIGHT	.10oz.	.2oz.	.2oz.	.27oz.	.4oz.
TOTAL WEIGHT	.25oz.	.4oz.	.4oz.	1.00oz.	2.0oz.
THRUST (average)	.5oz.	.6oz.	.6oz.	1.75oz.	5.5oz.
THRUST with Aug. Tube	------	-----	.75oz.	2.25oz.	7.0oz.
THRUST duration	8 sec.	12 sec.	12 sec.	14 sec.	10 sec.
JET EXHAUST VELOCITY	1200⅛	1200⅝	1300⅝	1400⅝	1600⅝
OVERALL LENGTH	1½"	1⅝"	1⅞"	3½"	2¼"
MAXIMUM DIAMETER	9/16"	1 1/16"	1 1/16"	1"	1¼"
MODEL SIZE LIMIT (span)	12"	16"	20"	36"	48"
MODEL WEIGHT LIMIT	1oz.	1.5oz.	1.7oz.	5.0oz.	16.0oz

* Includes fuel, wick, spare parts, instructions.
† Includes above items and augmenter tube.

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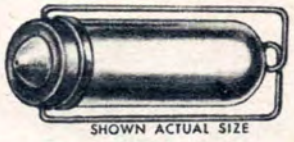

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A new compact HI POWER 2 tube full 5 watt completely packaged RF unit. Factory assembled and wired, equivalent to printed circuit type of construction. Chassis base 3 x 4. Ready for installation in your own cabinet. Why knock yourself out building your own? For less than cost of kit of parts. Complete with tubes, Petersen Z9A crystal and keying cable assembly..... $15.95
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GOOD'S XTAL MTR

Here's Dr. Walter A. Good's remarkable audio-tone transmitter for 27.255 mc

■ This transmitter is designed to send out a steady carrier on 27¼ mc. and also a 400 cycles tone for heavy modulation. That means the RF output is practically turned on and off at a 400 cycle rate.

Unit consists of three sections, crystal oscillator on 27¼ mc. (3V4), RF amplifier (3V4), and audio oscillator (3A5) which is a multivibrator running at 400 cycles.

When sending a steady carrier both 3V4's are working—the 3A5 is off. During modulation the 3A5 is oscillating at 400 cycles and its output modulates the grid of the 3V4 amplifier. This has the effect of turning the amplifier off at a 400 cycle rate; thus the average power output is less during modulation. This may not appear ideal to some, but seems to work quite well in the field. Power input to the amplifier plate is about 1.5 watts and power output measures about ½ watt. Output power is efficiently radiated by using McEntee's Mac II antenna coupling circuit plus a small series lamp to indicate current going into the antenna. This was on brother Bill Good's transmitter and works very well. Just tune for maximum brightness.

One of the transmitter problems is to prevent the crystal oscillator output from "leaking" to the antenna during "modulation." When this happens, the percentage of modulation is lessened and the receiver relay current doesn't drop as far. Actually, this is only a close-range problem and can be cured by building the transmitter in a tight metal box and keeping the crystal oscillator separated from the antenna coil, as shown.

The transmitter is fastened into a metal box, 10" x 10" x 8", which houses the dry batteries, serves as a sturdy base for the whip antenna, and forms a good "ground" for best radiation.

Build the transmitter according to the diagrams and sketches and use the following adjustment procedure:

1. *Voltages.* Use 135 volts on the crystal oscillator, multi-vibrator and power amplifier. This is HI-LO-power switch in the HI position.

2. *Crystal oscillator.* Place milliammeter (10 ma. or larger) at E-F, observing proper polarities, and tune coil L_1. The current should change as shown in Fig. 2. Set on the stable part of the curve as indicated, at about 6 ma. Touching coil with your finger should stop oscillation, but it should return to 6 ma. when finger is removed.

3. *Power amplifier.* Place meter at G-H and tune L_2 for a dip in current. This dip is not deep, only a mil or so. A brown bead (150 ma.) lamp from antenna post to ground in place of the antenna will help determine when the amplifier is delivering power, as will the pink bead antenna current lamp.

4. *Antenna coil.* On the bench use brown bead lamp connected between antenna and ground instead of the antenna. Vary coupling between L_3 and L_2 and also tune C_3 for maximum brightness. Keep the L_3 coupling on the light side as indicated by the plate current of the power amplifier. The plate current should not exceed 12 ma. If L_3 is far out of tune or the crystal tube stops oscillating, the amplifier plate current can jump up to 25 ma. which is damaging to the tube; go back to LO power and "rough in" settings. Pressing the modulation switch causes the lamp to dim. This is normal. Note that the "antenna current lamp" (pink bead) glows brightest when L_2 and C_3 are tuned best.

5. *Field check.* Connect antenna. Use field strength meter at a suitable distance. Repeat tests 3 and 4 and see that the amplifier plate current does not exceed 12 ma. Use settings which give maximum brightness of antenna current lamp. On different types of earth, the antenna condenser may need slight retuning for best lamp output.

The transmitter batteries are: 1.5 V.—one Burgess size 4F. 135 V.—three Burgess M30 (45V.). 12 V.—two Burgess F4P1 (6V.), used here with a 12V. Beep Box.

The writer happily acknowledges the assistance of many of the DC/RC Club members for serving as "guinea pigs" during the testing stages of this radio gear. In particular, thanks to Murray Colliere who helped "debug" the receiver, and to Bill Saks whose efforts converted a "workbench" transmitter into a practical field design.

Note. 52 mc. operation of receiver: coil—17T #26 enamel close wound; RFC—higher frequency type; tube—the 1U5 may have to be selected to find a "hot" one for this higher frequency. Also a plate voltage up to 67V is helpful.

Wag Transmitter Parts List

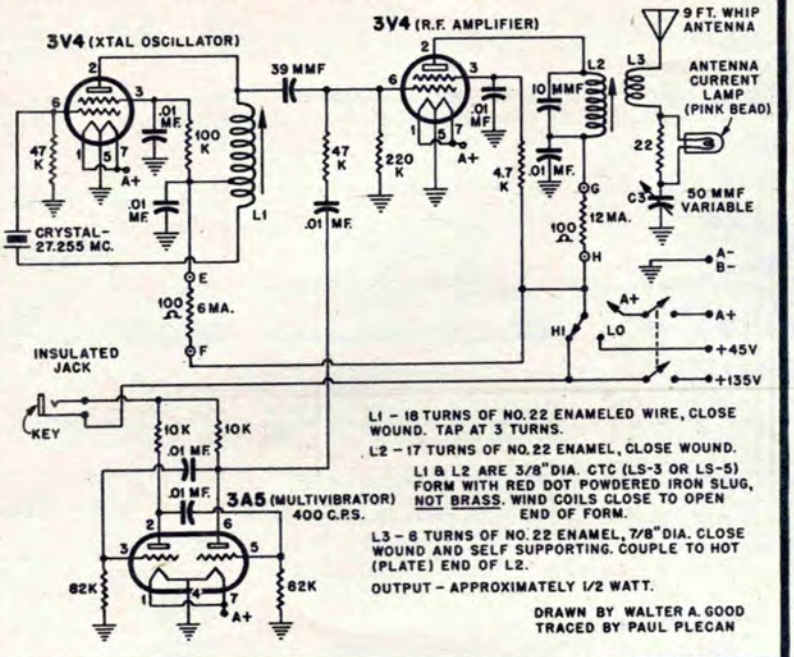
Capacitors: 1 4 to 50 mmf variable—Hammarlund APC-50 (or equivalent). 7 .01 mf disc ceramic. 1 10 mmf mica. 1 39 mmf ceramic.

Resistors, all ½ watt: 2 100 ohms. 1 22 ohms. 1 4700 ohms. 2 10K. 2 47K. 1 100K. 1 220K. 2 82K.

Misc. 3 sockets—7 pin min with shield base—Cinch 7XB. 3 tube shields for 7 pin min 1¾" high—Cinch 7S3. 1 crystal—Petersen -9, 27.255+.04% mc. 1 crystal socket, .050" pins, .485" spacing. 4 insulated phone tip jacks (E, F, G, H). 2 CTC type LS-5 or LS-3 ⅜" dia. coil forms, red slug. 1 phone jack, open circuit, insulated type. 1 DPST toggle switch. 1 SPDT toggle switch. 1 phono plug (RCA type) for beep box motor, if used 2 rubber grommets for ½" hole—⅜" ID. 1 chassis, 3"x4"x5" etched aluminum ICA #29340 or Bud CU-3005. 2 3V4 tubes. 1 3A5 tube. 1 pilot bulb 2V-60 ma pink bead #48 or #49. 2 sets insulating washers for ⅜" dia. jack. 1 utility case 8"x10"x10", Premier C-8101. 1 antenna, 4 section, 100" Ward type SC-8. 4 standoff tie points, insulated terminal, CTC—X1980C. Misc. wire and hardware.

—Walter A. Good

"WAG" MODULATED TONE XMTR – 27.255 MC.



L1 – 18 TURNS OF NO. 22 ENAMELED WIRE, CLOSE WOUND. TAP AT 3 TURNS.

L2 – 17 TURNS OF NO. 22 ENAMEL, CLOSE WOUND.

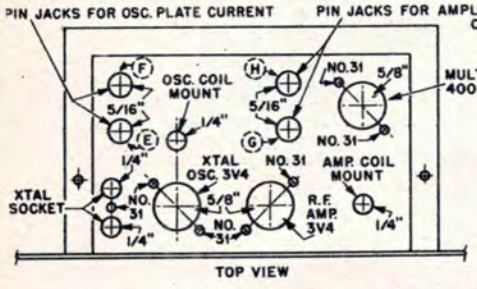
L1 & L2 ARE 3/8" DIA. CTC (LS-3 OR LS-5) FORM WITH RED DOT POWDERED IRON SLUG, NOT BRASS. WIND COILS CLOSE TO OPEN END OF FORM.

L3 – 8 TURNS OF NO. 22 ENAMEL, 7/8" DIA. CLOSE WOUND AND SELF SUPPORTING. COUPLE TO HOT (PLATE) END OF L2.

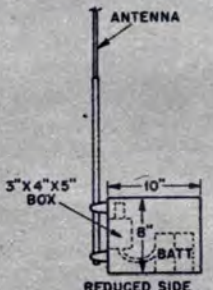
OUTPUT – APPROXIMATELY 1/2 WATT.

DRAWN BY WALTER A. GOOD
TRACED BY PAUL PLECAN

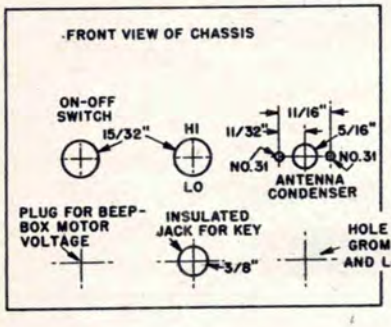
"WAG" TRANSMITTER CHASSIS



TOP VIEW



REDUCED SIDE VIEW OF XMTR.



ADJUSTMENT OF CRYSTAL OSCILLATOR (OSCILLATOR CURRENT VERSUS COIL TUNING).

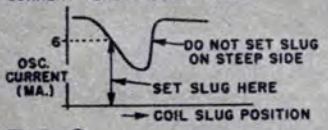
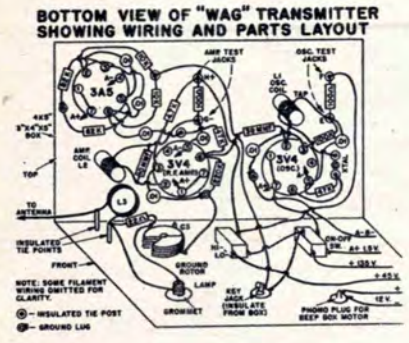


FIG. 2

SUMMARY OF TRANSMITTER OPERATION	MOD. KEY ON	MOD. KEY OFF
3V4 CRYSTAL OSC. PLATE CURRENT	6 MA.	6 MA.
3V4 R.F AMPLIFIER PLATE CURRENT	7 MA.	12 MA.
3A5 AUDIO OSC. PLATE CURRENT	6 MA.	ZERO
TOTAL PLATE CURRENT	19 MA.	18 MA.
POWER INPUT TO AMPLIFIER	0.9 WATTS	1.6 WA.
"B" BATTERY VOLTAGE	135 VOLTS	135 V.

WITH "B" VOLTAGE AT 45 VOLTS (LO-POWER) THE POWER INPUT IS ABOUT 0.1 WATT.

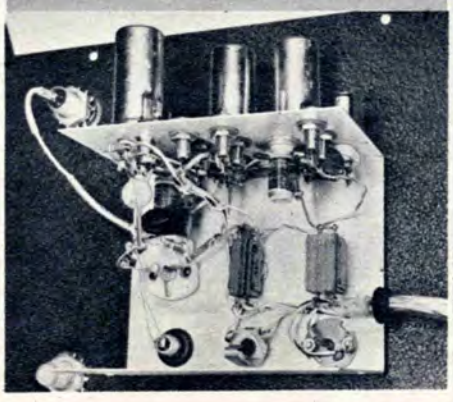
BOTTOM VIEW OF "WAG" TRANSMITTER SHOWING WIRING AND PARTS LAYOUT



NOTE: SOME FILAMENT WIRING OMITTED FOR CLARITY.

⊕ – INSULATED TIE POST
⊖ – GROUND LUG

Full-size "Wag" chassis drawings are on Group Plan #654A (50¢), Hobby Helpers, 770 Hunts Pt. Ave., NYC 59.



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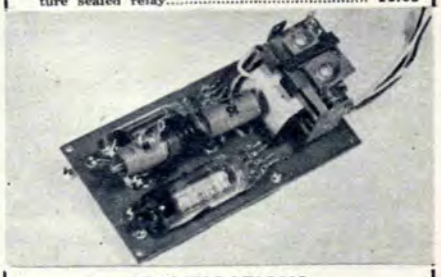

SPECIFICATIONS

INPUT TUBE, RK-61—Hard tube, 2nd stage, **ESSCO MPC-1.** Total filament drain (2 tubes) 85 ma. Input tube idles at .5 ma. drops to .1 ma. on signal. 2nd stage current rise from 0 to 2.2 ma. (using 45 volt B battery) allows non-critical relay setting. These operation settings allow long tube and battery life (2nd stage has min. life of 1,000 hours).

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—COMPLETE ESSCO M-M-M RECEIVER.....$13.95

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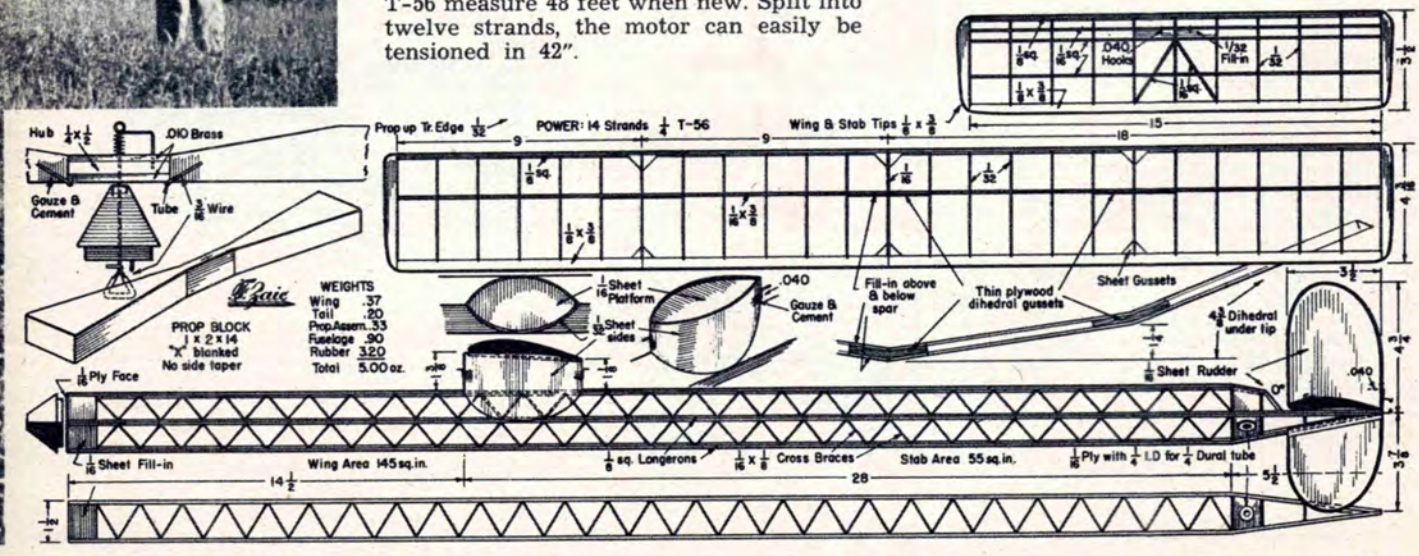
Powerwise, the limited class is a dream. Models are about two-third Wakefield size but climb high on half the rubber. The little planes are hand-launched; there is no landing gear or take-off to worry about; a low power-cruise set-up is possible.

The structure weight comes out around 2 ounces, leaving 3 oz. of rubber to tension. Gears appear impractical. A little "long" model is one solution. Three ounces of ¼" T-56 measure 48 feet when new. Split into twelve strands, the motor can easily be tensioned in 42".

"Limited Lou" has an undercambered airfoil section in the stabilizer and maximum lifting areas to gain all help possible in the glide. A 14" propeller gives a fast climb and the long, few-strand motor allows many turns. Without thermal assistance, a limited rubber model is hard put to exceed three minutes; the answer is to blast 'em high under power so they are in thermal country when the propeller folds.

At the 1953 Philadelphia Nationals "Limited Lou" made two out-of-sight flights in the wind. The model was not returned in time to place. —*Hal Roth*



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NEW ITEMS FROM A C E

HIGH RESISTANCE ACTUATOR

The Ace II Actuator is designed for two tube receivers where current change is 2 MA or more. Wires into receiver where relay normally would go and does away with relay and actuator batteries. Ample for ships up to class B. Complete kit, printed and illustrated instructions. Compact, weighs 1 3/4 oz. $2.95

MAC II TRANSMITTER

Customers demand this xmitter and while PE 157's are in short supply, batteries or power pack may be used for this powerful xmitter.

Basic Kit—all parts—condensers, resistors, hardware, etc.	$4.50
Etched Aluminum Cabinet	2.95
9½ foot antenna	2.95
Petersen Z9A crystal	4.95
3D6 Tubes, each	1.00
Combo—everything you need except batteries or power pack	16.50

MPC1 TUBE

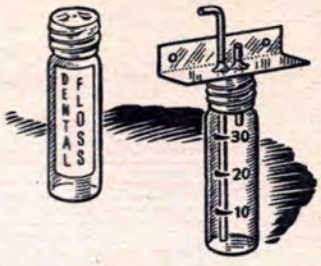
The new miracle tube . . . use it in the Mini Mac for out of this world current change, or use in the second stage of two tube circuit for .5 MA more current than provided by an RK or XF 2.25

Many other values. Write for free printed and illustrated catalog.

ACE RADIO CONTROL

Box 301 Higginsville, Mo.

To strengthen and improve die-cut balsa pieces, dope & sand sheets before separating parts suggests John Yedinak, Hornell, N. Y.



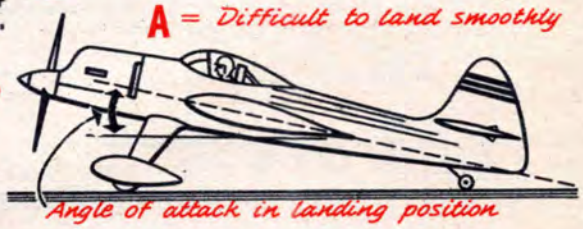
Container for dental floss can be adapted to visible supply fuel tank for A/2 engines says Sgt. Norman Anderson, Columbus, Ga.

Model-plane SKETCH BOOK

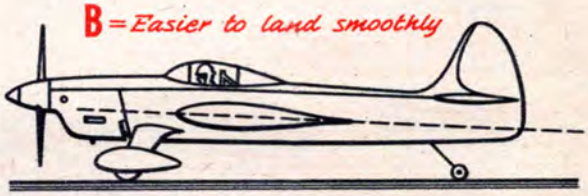
Have you developed something new and original in construction, control or flying? Send rough sketch—we'll redraw and pay $10 for each accepted —to Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

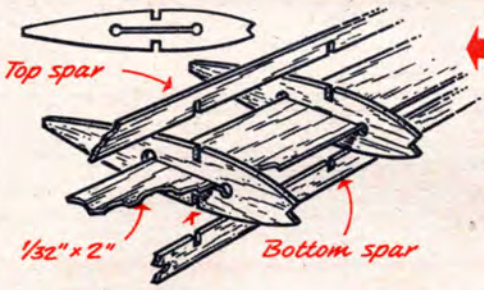
Larry Phillips, St. Clair Shores, Mich., reminds that stunt models land smoother if chord line is nearly parallel to ground (B). High thrust line permits ground clearance with short front gear. Tail wheel can be higher to hold wing near level position...

A = *Difficult to land smoothly*



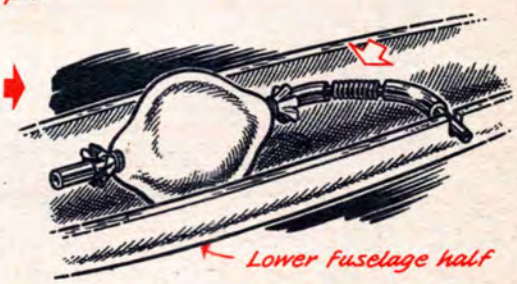
B = *Easier to land smoothly*

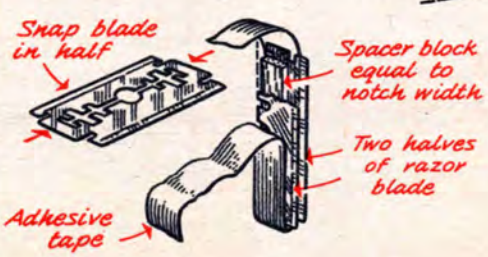




Easier assembly is chief advantage of stunt model wing structure used by Daniel Cohn, N.Y.C. Ribs are drilled, slots cut; assembled on 1/32" flat sheet. Notched spars added, then T.E. & L.E. strips cemented in place.

G. Fiorini, Bologna, Italy, utilizes bike or football check valve from rear of "balloon" tank to enable him to refill tank through tube without taking model apart —





Formers, ribs are quickly and uniformly notched with double-edge razor tool devised by 12-year-old Robert Sojka, Danvers, Mass. Tape holds parts together —

Miniature of antique cannon can be loaded and fired!

Gun Collectors Show

Everything from blunderbus to brass cannon is displayed by members of the Michigan Gun Collectors Association. Items are for sale or swap.

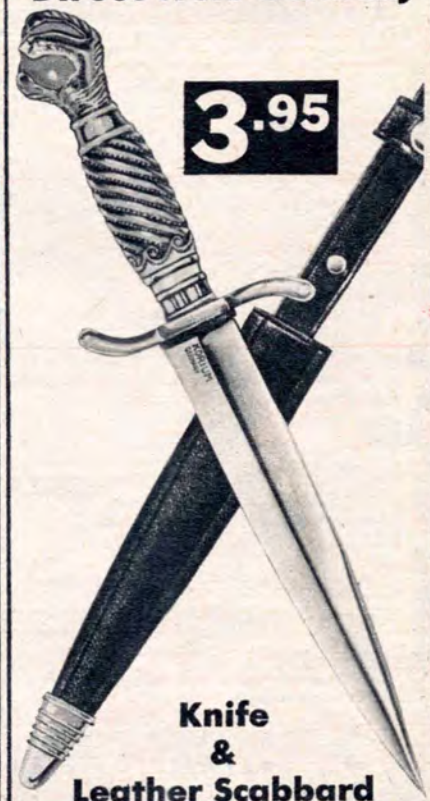
This 5' "Kentucky" rifle made in Lancaster, Pa., is 190 years older than Scott Batchelder, 4.

Joyce Van Dulst wards off the boys with a 1770 flintlock blunderbus.

Many a deed of battlefield glory is represented by these military pistols, mostly flintlocks.

Solingen Steel HUNTING KNIFE

Direct from Germany



Knife & Leather Scabbard

The famed **BLACK FOREST HUNTING KNIFE** —made in Solingen, Western Germany of superfine *Nicht Rostend* (non-rusting) steel is **NOW** available here! The rugged beauty of this superb knife has already won recognition for design on the Continent—and its utility and value as an aid in hunting & fishing has made it a favorite with sportsmen all over Europe. Will stand up under the most rugged treatment; genuine leather scabbard is metal-tipped; the blade is actually sharp enough to **shave with!** Length, 10 inches. Sleek, graceful lines of this new German import provide an ideal rec room or men's den decoration. It's a dandy gift item and a superb collector's piece! The tough, sturdy **Solingen Steel** assures you years of dependable service.

MAKE THIS TEST!

Place a thick metal disc or medallion on the ground. Plunge the point of the **BLACK FOREST KNIFE** downward. The knife will completely pierce the metal piece without **ANY** damage to the blade! Import supply is limited and the low 3.95 price (postpaid) for **BOTH** knife and scabbard means you'll have to act fast! Send 3.95 for prompt, free delivery. CODs plus postage. Your 3.95 back quickly if you're not delighted. Send to:

THORESEN'S, Dept. 213-E-80
352 Fourth Avenue, New York 10, N. Y.
(Residents of Canada: Avoid duties & "extras!" Order direct from THORESEN CO., 45 St. James St. W., Montreal 1, P.Q.)

THORESEN'S, Dept. 213-E-80
352 Fourth Ave., New York 10, N. Y.

Please **RUSH** me a **Black Forest Hunting Knife** and leather scabbard on 5-Day Money-back home trial. If not delighted with this remarkable hunting-&-fishing aid, I will return it within 5 days for **FULL REFUND.**

☐ **3.95** enclosed. Send prepaid.
☐ Send C. O. D. plus postage.

NAME.....

ADDRESS.....

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(Canadian orders shipped direct from Canada, duty paid. No extras! Write: Thoresen Co., 45 St. James St. West, Montreal 1, P.Q.)

MPC-7

Now for the first time a fuselage made of a special magnesium designed to endure all types of flying. Can be used over and over again regardless of the beating it takes. Will save you many dollars in the long run. Complete model kit weighs only 24 ozs. *including torp. .23 engine. Features four bolts for quick replacement of wings and elevator; leading and trailing edges; cut to shape die-cut wing ribs; cut to shape rudder stabilizer and elevator. Solid wing tips; wing span 39-ins. Compactness of this flying model kit makes transportation to and from flying fields a cinch. *Engine price extra. Excellent for combat flying.

$6.95 less engine

Send Postcard for FREE illustrated circular—for these amazing offers

- ½A FLYING SCALE MODELS
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- CATS WHISKERS
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THIMBLE-DROME SPACE BUG Jr.

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Performance up to 14,000 RPM. All that any pleasure flier or beginner requires! Little brother of National Champion Space Bug .049—with famous Thimble-Drome easy starting and efficient operation. Flies in any position, upright or inverted, right or left. Positively no break-in required. Needle valve away from exhaust & prop. A sensational ½A engine value.

AT ALL HOBBY DEALERS

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Box 476, Santa Ana, California

HIS HOBBY: BULB SHIPS

Light-fingered work by Eckhard Rolf, 14, Stade, Germany, whose hobby is building sailing ships inside old electric bulbs. Size of the bulbs varies from standard lamps to tiny ones used on car dashboard. Eckhard watched seafaring men assembling ships in bottles, decided that he would go one better. Ambition: engineer.

What's Your Hobby?

■ Almost everybody has a hobby today. Some get sheer enjoyment out of their handicraft, others reap benefits besides. Whatever they may be, hobbies draw folks closer together through mutual interest. So why not share your leisure-time activities with other young people through our "What's Your Hobby?" section. Send us photographs and description of your hobby, how you got started and when. What have been your accomplishments to date? How has your hobby helped you? Has it produced revenue? Why do you recommend it to others? For what ages has it greatest appeal?

FOR EVERY PICTURE USED HERE WE'LL PAY NOT LESS THAN $25!

HIS HOBBY: RADIO

Youngest ham, 8-year-old Leonard Hoss, Tujunga, Calif., holds Federal Communications Commission's Novice, 3rd Class, Technician and General Amateur Radio Operator licenses, for which he had to pass highly technical tests. A fifth grade student in elementary school, Leonard mastered basic arithmetic when he was three. His call letters are W6SJR. Len's mother is a Los Angeles court reporter.

You Ask... we answer

Ross RS-1 . . . In your Air Progress 1953/54 on page 65, lower right-hand corner, is a picture of a "Ross RS-1 (1939)." I am a lightplane enthusiast and hold a student license and I am curious if there is any way to get hold of construction plans.

A/3c Ronald A. Billib, Tyndall AFB, Fla.

• Sorry, we do not know where you can contact the builders of the Ross RS-1. This plane was designed and constructed prior to World War II and we believe that only one prototype was built.

Weight of A-Bomb . . . A friend and I have an argument we want to settle. He says the B-36 carries only five atomic bombs, I say more. Can you tell me how many and weight of each A-bomb?

Thomas Wilk, Lilly, Pa.

• The number of atom bombs carried by the B-36 has not been revealed, as it is confidential information. The B-36 has five bomb bays but this does not mean that it can carry five A-bombs. Weight of the A-bomb has not been released, either.

Wants Two-cycle Engine . . . I am a regular reader of your magazine and like it very much. I am looking for a two-cycle engine, one or two cylinder, air cooled, from 10 to 25 horsepower. I want an American-built engine because of obtaining parts when necessary. I am building a small light craft, and want an engine for this. I am a licensed pilot.

A/2c Herbert D. Varnum, Pinecastle AFB, Fla.

• The only concern which manufactured two-cycle engines of low horsepower was McCulloch Motors Corp., 6101 W. Century Blvd., Los Angeles 45, Calif. They built engines for target drones and we believe they still do so. Some of these engines were declared surplus after the war and available to civilians. We suggest that you contact this company.

U.S. Sailplane Manufacturer . . . I am a member of a newly formed Air Explorer Squadron. My squadron is interested in a sailplane or glider of some type and would greatly appreciate a list of addresses of sailplane makers.

Marshall Heard, Harlingen, Tex.

• The only sailplane manufacturer in the U.S. is the Schweizer Aircraft Corp., Elmira, N. Y. Write to them for their list of sailplanes. Also suggest that you contact the Soaring Society of America, Box 71, Elmira, N. Y.

More Info on Puzzlers . . . On page 97 of your 1953/54 edition of Air Progress you publish a list of various aircraft manufacturers with the aircraft types produced during World War II. The majority of these are quite familiar to me, but I must confess that I stumbled hard over several and am writing for assistance.

Please, if possible, give me some line as to the following: Cessna C-78, Curtiss C-55; Douglas C-49, C-53, C-68; Fairchild C-61; Lockheed C-57, C-59, C-60. Also, is the correct Navy designation for the Lockheed Constitution R6V? You list it as "89."

Tom Baxter, Hollywood, Calif.

• Following are descriptions of the aircraft which puzzled you:

Cessna C-78, twin-engine Cessna, used during war as light military transport. Curtiss C-55, prototype of the Curtiss C-46 Commando. Douglas C-49, military version of the DC-3, powered with Wright engines. Douglas C-53, cargo and troop version of the DC-3. Douglas C-68, military version of DC-3 with standard airline interior. Fairchild UC-61, military version of the 4-place Fairchild 24. Lockheed C-57, Lockheed Lodestar as military transport, with Pratt & Whitney engines. Lockheed C-60, Lockheed Lodestar military transport with Wright engines. Lockheed C-59, Lockheed Lodestar military transport. Lockheed 89 was factory designation for the Constitution; Navy designation was R7V-1.

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PHOTOGRAPHS

AIRCRAFT PHOTOS—Seven new sets just printed, five photos in each set only 25c per set. Sample and list 10c. Harry McIntyre, Box 423, Ocean City, New Jersey.

PHOTOS OF AIRCRAFT from Wright biplane to latest jet. 250,000 photos in stock. Also old aviation books. Send dollar bill for six real photographs of the latest jets, plus the 52 page illustrated catalogue. Aeroplane Photo Supply, Box 195 Toronto, CANADA.

1914-1918 AERONAUTICS — Do you collect aviation negatives, photos, aces' letters and autographed photos or anything pertaining to the 1914-1918 war in the air? If so, a 3c stamp brings price list. Charles Donald, P.O. Box 186, Union City, New Jersey.

SPECIAL OFFERS

RECEIVE a ½ Class A model airplane and engine practically as gift. Details 10c. Hobbycraft, Box 104-M, Brooklyn 30, N. Y.

NO MAGIC—CRYSTAL BALL OR BALLYHOO—our customers will back us up. If you are seeking a solution to lower prices and a source of services—try us—gamble 3c and find out. Precision Aero Research, 2020 Ohio, Quincy, Illinois.

MODEL SUPPLIES & EQUIPMENT

KITS AND SUPPLIES. Full line. Planes, boats, cars and other hobbies. Send 10c for illustrated catalog. Howard Company, 141-45 71st Ave., Flushing 67, N. Y.

CP DISTRIBUTORS for model supplies. New item: "Mini-Mac" Neomatic relay, $6.50. Free catalog. CP Distributors, Box 4094, Los Angeles 24, Calif.

RADIO CONTROL OR U-CONTROL model airplanes ready to fly, any kit or your own design built by experts. Write for prices. Hamilton Model Works, Box 90, Hamilton, Ill.

FOR SALE

FOR SALE—one Piper Tri-Pacer, one 7½" Super Buccaneer, one 6" Buzzer'd, one 6" Rudder Bug, one Senior Live Wire, one 9" Taylorcraft, all R/C, perfect condition. One Forster 99, Torpedo 19, two speed and 32, O.K. Twin, two spitfires, all bench time only. One Super Aerotrol 27, receiver, escapement, millmeter, never used new $40. One McNabb 465, transmitter and receiver never used $60. Interested write, Raymond J. Hanes, 1831 Medford Ave., Indianapolis 22, Indiana.

COMPLETE ½ A CONTROL-LINE AIRPLANE that really flies with brand new engine, props, control handle, engine wrench, manual, and guarantee. Can be assembled for flight in one hour—will outlast and outfly all other ½A contro-line models. See page 63.

BACK NUMBER MAGAZINES

FOR SALE: BACK NUMBER, Flying Aces, Air Trails, Model Airplane News, Popular Aviation, G-8 & His Battle Aces. Dick Olsen, Sisseton, S. Dak.

BACK ISSUE AVIATION MAGAZINES send 25c for latest lists. Airphotos, Box 117, Jamestown, New York.

PLANS

BE SENSATIONAL FIRST IN YOUR NEIGHBORHOOD fly Rocket XSI, 40" tall, 1000' Altitude, power: Space Bug Jr. plans 50c. No stamps. Kole Engineering, 2525 College, Berkeley 4, California.

RECEIVERS—3 tube (Reed) 50c; 5 tube superhet 75c; 3 tube tone 25c; 3 channel 50c. Transmitters—5 watt battery 50c; 5 watt mobile $1.00; 2.5 watt tone 50c. Electronic Model Engineering, 6127 Alta Avenue, Baltimore 6, Maryland.

HELP WANTED

JOBS OVERSEAS! Some paying skilled $340 weekly, drivers $275, laborers $255. Transportation, overtime. 23 firms seeking construction men, clerks, etc. Spain airbase details. 269 projects underway in 52 countries. 48 page, printed, plastic-bound manual. Applications, everything, $1.00. JOBSERVICE, (D-22), Box 30, Billings, Montana.

RADIO CONTROL

NEW! Stanco Deluxe lever action proportional pulser, motor driven: $24.95. New!—3rd hand for sale! Automatically keys your transmitter on and off while you check your receiver at any distance. Complete kit: $5.35; ready-to-operate: $7.95. New! Electronic pulser for Bonner compound escapement. Push lever, right for 1 pulse, left for 2 pulses, right and left for 3 pulses. Complete kit including case, relay, batteries and instructions: $5.45. Trammel proportional pulser, kit of parts and diagram, less tube, relay: $2.45. 2 volt battery charger, complete kit $4.95; wired and tested: $6.95. Portable black crackel steel cabinets, 12" x 7" x 6": $2.85; 9" x 5" x 6": $1.85; 4" x 4" x 2": 85c. 6 volt vibrator supply kit, 180-250 volts @ 50 ma. kit $6.95, wired $10.95. New! Gyro field strength meter—checks transmitter output and receiver current, complete, ready to operate, $8.95. New! Mac II transmitter VX2, with 6 volt vibrator supply in 9" x 5" x 6" cabinet, complete with antenna, meter keying switch, $12.95. All transmitter & receiver parts at lowest prices—See more Gyro specials on page 10. Gyro Electronics, 325 Canal Street, New York 13, New York.

YOU ASKED FOR IT. HERE IT IS—"The Beginner's Radio Control Manual." A book produced expressly for those who desire knowledge of the basic fundamentals necessary for successful R/C activity. Truly a one volume training course in R/C with two full chapters devoted to the construction and operation of 27.255 megacycle transmitter and receiver. First of a series of publications by Scientific Hobbies Company, P.O. Box 7334, Chicago 80, Illinois. Price $1.15 postpaid.

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DECALS—CUSTOM MADE FOR CLUBS, small or large quantities. Details free. Dek-A-Lac Mfg. Co., P.O. Box 232, Keyport, N. J.

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NEW! CAMERON ".09 Special"

WATER COOLED MARINE ENGINE

Single jet model complete with grooved flywheel and starting cord.
only $9.95

Double jet model complete with grooved flywheel and starting cord.
only $11.95

The Cameron .09 Marine Engine was developed especially for powering model boats. It is available in a two-speed model in addition to the conventional single-speed model. The two-speed (double jet model) gives the user of radio control models the added advantage of being able to change the speed of the engine while the boat is in operation. The regular single-speed engine is also ideal for use in powering radio control boats where the two-speed feature is not especially preferred.

The Cameron .09 Special Marine Engine can be used in powering model boats of almost any size. In testing during its development, a raw boat carrying four people was actually towed by a small radio controlled boat powered by a Cameron .09 Marine Engine.

The engine is of very rugged construction with extremely thick wall sections throughout to provide for even heat transfer and dissipation to eliminate all possibility of uneven expansion or thermal distortion during operation. It is a lapped piston type engine having one-half inch bore and one-half inch stroke, and is precision built, using the best materials throughout. All working parts are heat treated and micro-finished for long trouble-free service.

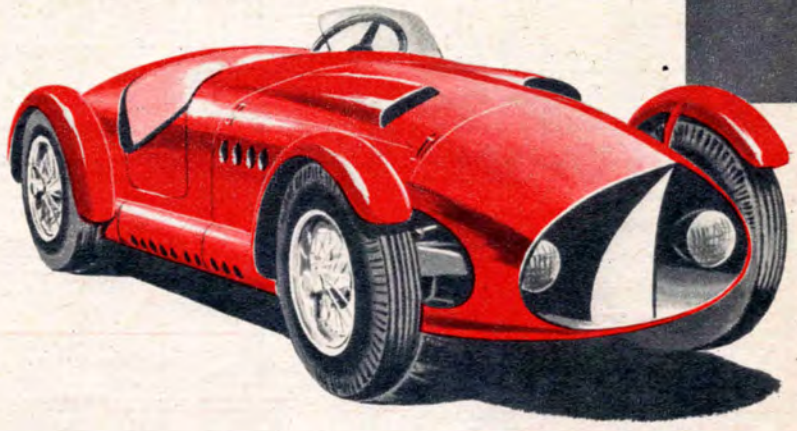
Water cooling is provided for on both models of the Cameron .09 Special Marine Engine to eliminate all possibility of overheating of the engine which would otherwise cause faulty operation due to improper carburetion. This cooling feature makes it possible to install and operate the engine deep in the hull or in cabins of boats where engines would not otherwise operate properly due to an insufficient stream of air for cooling. Engine runs of any time duration are also made possible by this special cooling feature which is not found in any other model engine.

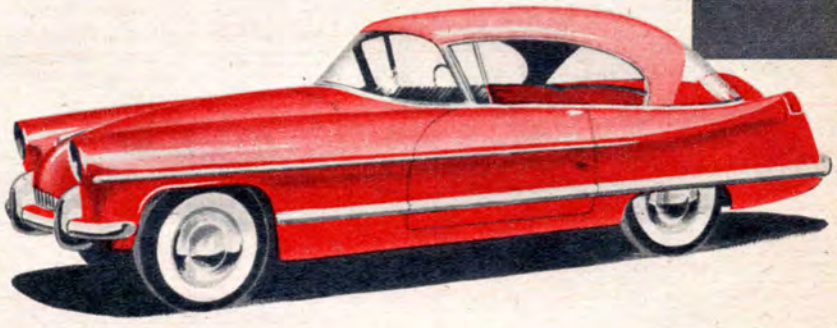
Water cooling of engine is not necessary when engine is operated where sufficient air is available for air cooling, as engine is adequately finned for proper air cooling under all normal circumstances.

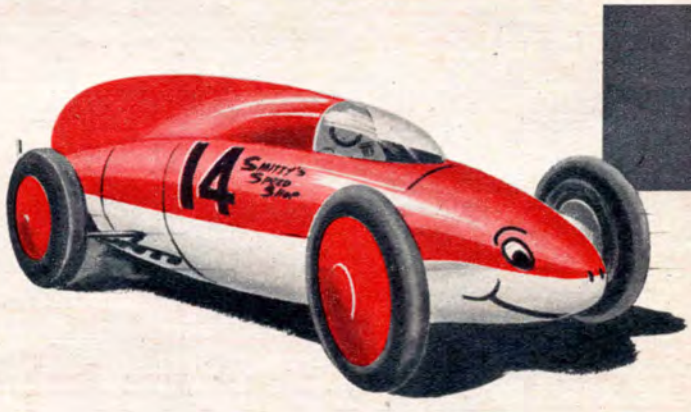
MANUFACTURED BY
CAMERON PRECISION ENGINEERING CO.
CHINO, CALIFORNIA

Air Trails HOBBIES

AUTO DESIGN COMPETITION



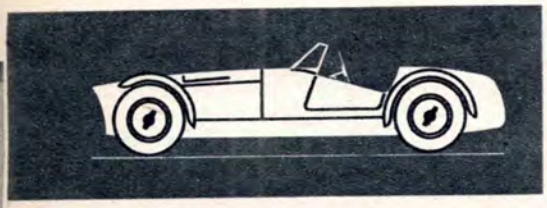




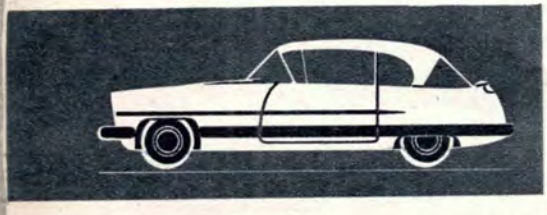
AWARDS OF $50.00—$25.00—$10.00 EVERY ISSUE

Cash awards will be made each issue for the three most significant auto designs submitted to this magazine. $50 will go to the top design, $25 to the second and $10 to the third. You may submit sketches for an original design auto, for a restyled car, for sportscars, family sedans, record cars, hot rods, military vehicles or unusual trucks. Include side, front, rear and top drawings, plus sketches of the proposed vehicle from three-quarter front and three-quarter rear positions. Sorry, we cannot enter into any correspondence about this contest. Send entries to Auto Design, c/o Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

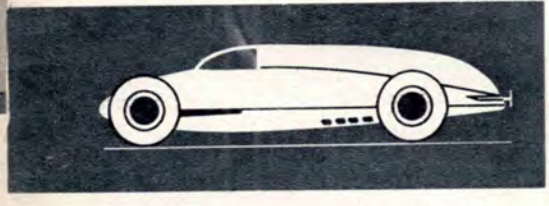
It's easy to enter—see rules announcement!



Good first prize example is this sport-competition car on 102" wheel base. This type of vehicle to be suitable for fast touring as well as road and airport racing must have short wheel base for good maneuverability and cornering. In order to qualify as a "sportscar," automobile is equipped with headlights, doors, fenders and windshield. "Bass-mouth" front admits plenty of air to cool powerful high-speed engine. Body is of light construction, streamlined for minimum drag. Wire wheels, center locking hubs.



Well qualified for the second prize: 4-5 passenger hard-top sport sedan which the designer aptly named the "Trunkless Wonder." Baggage compartment is behind rear seat, the back of which folds forward for stowage of luggage. Windshield and rear window of the wrap-around type are the same, to give excellent visibility. Interesting is the very wide door which allows access to front and rear without tilting of front seat. Front fenders are above the hood line, both visible at all times. Wheel base is 115".



Third place award goes to a Lakester. Despite its appearance it is not the familiar "belly tank" of California renown, but fabricated from sheet metal or glass fiber reinforced plastic, according to preference. Engine can be one of the well-known passenger car powerplants, is souped up and located behind the driver. Little provision is made here for driver comfort, since this type of car is built primarily for straightaway high-speed runs of short duration. Low drag, high power-to-weight ratio. 105" chassis.

All types are eligible: restyled passenger cars, original sport jobs, hot rods, or military types.

INTRODUCING THE New F-B BASIC TRAINER

It's Neat!

THE BASIC TRAINER has aluminum landing gear, complete hardware (pre-fab—only 7 parts to bolt and glue together), ready to fly in an hour; for engines .14 thru .35. Class A-B & C. Sells for....$2.95

By mail add 25c

F-B Planes give the beginner or experienced model builder a chance to get real enjoyment out of the most exciting modern pastime.

2 NEW F-B CAR KITS

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BELL P-39 AIRACOBRA flying scale control line model plane by Walter A. Musciano. Famous World War II fighter. Uses glow plug or diesel power plants from .14 to .35 cu. in. disp. Spans 28 inches; 26 inch overall length. (PAGE 30)

McGOVERN'S MONSTER by Don McGovern is the long-awaited giant-size ROG-ROW amphibian free flight for radio control work. A thrilling project for the master modelbuilder. Spans 114 inches; is 92 inches long; takes power plants from .65 to 1.25 cu. in. (PAGE 36)

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GROUP 654A

SALT LAKE CITY SADIE by Barney Taft is proven free flight contest endurance modelplane for engines from .15 to .23 with ease and can be flown in FAI international gas events, or in U. S. Class A or B categories. Spans 64 inches; 41" overall length. (PG. 36)

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GOOD'S XTAL XMTR is 27.255 tone transmitter by Dr. Walter A. Good for use with this noted authority's non-selective audio receiver. Plans give full size chassis pattern, etc., plus the designer's comments and technical notes. (PAGE 78)

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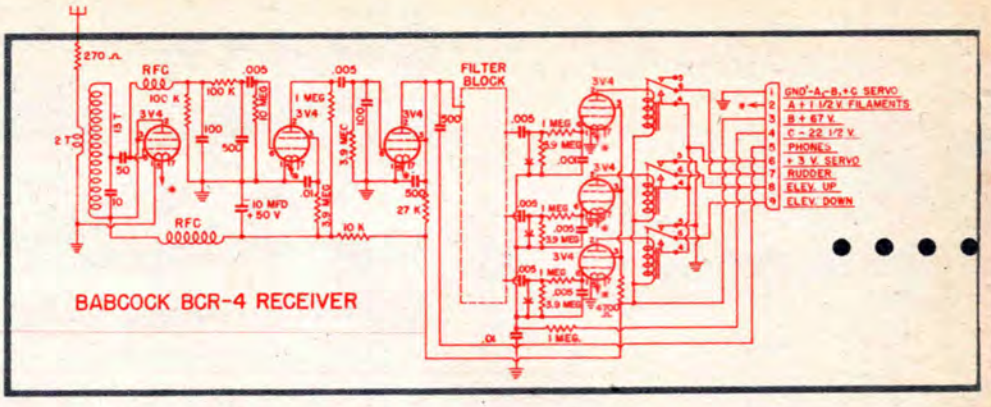


Babcock's 3 CHANNEL R/C

■ Following the lines of their successful BCR-3 single-channel receiver, Babcock Radio Engineering offers a reliable system to have three control operations instantaneously and at will. The new BCT-4 receiver has but one adjustment—that for tuning to resonance with the transmitter. There is no sensitivity control, no plate circuit variable resistor, and there are no adjustments on the relays. While a 3-channel outfit is not usually recommended for the beginner to R/C, this one will certainly confront him with a minimum of problems.

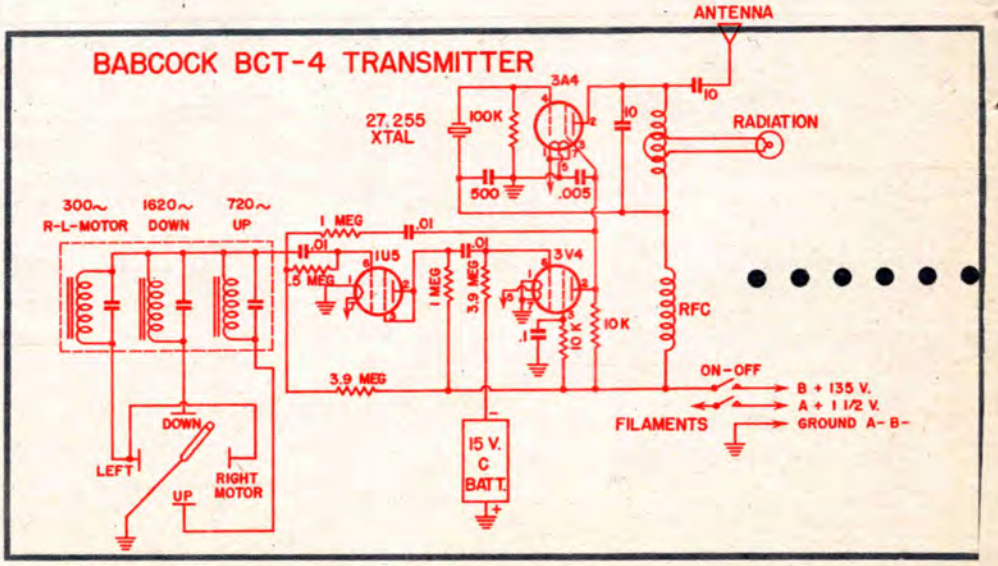
All of the tubes are the same; in the unlikely event of a tube failure, a single spare takes care of any position in the receiver. On all tubes, only one-half of the filament is in use, a measure intended to reduce "A" current consumption.

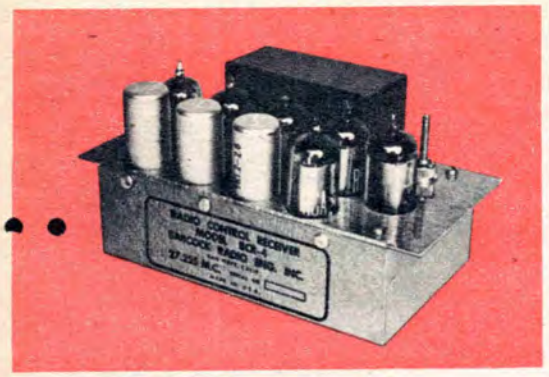
Tuning is very broad, and antenna length is not at all critical; a couple of feet of wire will suffice. There is no need to do any audio tuning, since the filters, which are contained in a sealed metal box, are set at the factory and should never require change.

Though there are a lot of tubes in the receiver, and current drain is naturally heavier than in receivers with only one or two, this particular unit is very tolerant of voltage drop in the power supply; for example, a 67½ V. battery can be used till its voltage has dropped to 52 V., while a 60 V. battery can be used all the way down to 49 V., before replacement is necessary.

All receiver components are attached to an insulating base housed in an aluminum case; three sealed Babcock relays plug into the same kind of sockets as the tubes. The set is a bit too heavy to mount by means of rubber bands; sponge rubber shock absorbers are suggested. All connections to the receiver, except the antenna lead, are by a miniature 9-pin plug. As with the BCR-3, the makers offer a low-cost installation kit, containing flexible wire in several colors, battery and receiver plugs, switches, phone plug, etc.

For use in model planes, Babcock recommends a Bonner compound escapement for rudder, and Bonner motor control escapement for two-speed engine. A non-self-centering motor-driven servo is utilized for the elevator. For boats, this servo is used on the rudder, with the third channel for motor speed control.





The BCT-4 transmitter externally looks much like the single-channel Babcock BCT-2; it is the same size and is housed in a similar gray hammertone-finished case. All parts are attached to the front panel, which is removable for access to the batteries. Tuning (which should be seldom) is through a front panel hole; a lamp bulb indicates proper operation and aids tuning. Major external difference is that the new unit has a little control stick projecting from panel; marked Up, Down, Left, Right, and Motor.

Transmitter is crystal controlled for use on 27¼ mc. Three audio tones, 300, 720, and 1620 cycles, are non-adjustable, since the audio oscillator circuit is also controlled by tuned filters set at the factory; filters are sealed in a metal case.

The transmitter is supplied with crystal, tubes and whip antenna, less batts.

Transmitter: Type BCT-4. Case size, less panel projections—4¾" x 3½" x 8" high. On-off toggle switch for batteries. "Control stick" for sending any of three audio tones at will. Radiation indicator bulb allows continuous check of operation. Single-section 3/32" dia. rod antenna projects from top of case about 35"; plug-in type. All batteries held under single mounting clamp, except C batt., which fits in its own clips.

Battery Requirements: One 15 V. C battery (Eveready #411 or equiv.); indefinite life, as there is no drain on it. Two 67½ V. batteries (Eveready #467 or equiv.), 135 V. at 16½ ma. (carrier only), and 20 ma. with control stick depressed. "A" supply is two large flashlight cells; 1.5 V. at 350 ma.

Receiver: Type BCR-4. Overall size including mounting flanges—6" long x 2⅞" wide x 3" high. Weight 17½ oz., with all tubes and relays. Relays are SPDT, sealed, plug-in. Single adjustment only—for tuning. Non-sensitive to antenna length, hand-capacity, etc. High sensitivity, but will not overload close to transmitter. Responds only to three audio tones of associated transmitter. Only one type tube used throughout.

Battery Complement: Lightest recommended battery supply, 10½ oz. (including cells for servo and escapements, and battery boxes). "A" battery drain is 1.5 V. at 350 ma. "B" battery drain is 1.8 ma. idle and 7 ma. on signal, with 60 V. "C" battery for 60 V. use is 15. V., with no current drain. Lightest set of batteries consists of 8 pencells, two 30 V. batteries in series (Burgess U2OE or equiv.) and one "C" battery (Eveready 504E or equiv.).

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#9 for 1 size C med. cell .25
#10 for 2 size C med. cells .40
#11 for 1 size D large cell .25
#12 for 2 size D large cells .40
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(Continued from page 75)

to 131.05 mph. Looks like he won't stop there either. Guy Rogers' cute Half-A speedster kept hitting 89 mph, but just couldn't break the 90 barrier. These records are probably being processed (by A.M.A.); Maurice Teter feels they will be accepted and that they give an indication of the fast speeds in the slow South, helped by the synthetic California weather!"

Mr. Teter, who directed the 1951 National Model C Airplane Championships in Dallas, wrote us after the record run when Morton had only (!) done 155 plus. Says Maurice, "Leland is one of the old school of control line flyers. He used to fly with Johnny Clemens, yours truly and the gang way back when 'combat' was 'dog-fighting' and a Tiger in a Fireball was the pure goods. Holliday, Clem, Beasley and Stone were at the trials and witnessed the flight. All were very happy with the timing especially when a supporting time of 153 was run up with the same fuel and prop. Incidentally, the temperature was 60 deg. and the humidity 40% with no wind. The 'shots' think this had a great deal to do with Morton's flight. It was the first run on a stock Mac .60."

Southern Scene. Decatur, Ga., tells us about a new event that their club has been enjoying, called "Stunt Speed." Standard-type speed planes are not used and here's why: Three attempts to make an official flight. Three minutes allowed on each flight to get started. Flyer must do one loop immediately after take-off and within two laps give signal for speed run to start. During the timed laps plane must stay under 12 feet. Motors not to exceed .35's. Class A is clocked for 4 laps on 52 ft. lines. Class B&C clocked for 7 laps on 60 ft. lines; lines must be at least .012.

"Flying With Godfrey," a very interesting film, is available through your Eastern Air Lines representative.

—R. H. Elliott, Box 5078, Atlanta 2, Ga.

Western Roundup. First open contest for R/C boats was held in Fairmont Park, Riverside, sponsored by the AVA-Toros of the Convair Recreation Association with R. L. Brown as contest director.

First of its kind held anywhere in the world, the meet was strictly experimental, since there are no standards set up to go by. All boats were required to be radio controlled, with no other restriction, consequently the variety of boats, their sizes and power were many. The smallest boats were about a foot long powered with a scale model Allyn outboard. The largest boat was over 4 ft. long with almost a full horse power. The receivers varied greatly, ECC's being the most numerous as was the 27.255 frequency. Bang-bang systems had the greatest following. There was even a Rockwood 3-tube, 5-channel vibrating reed set for rudder control and different engine speeds.

The spectators were treated to a hotly contested event with these small boats weaving their way in and out and around the twenty-three marker buoys which designated the course they were to follow. Initial efforts to navigate the course found most of the fellows unable to complete it, but as the day wore on and experience was gained, more and more made it with better and more precise trips till they were very consistent. A 2:45 p. m., with only 15 minutes to go in the contest, there were two tied for first with 370 points, with the second place man very close behind at 360 points. At 2:58 this man who had 360 points launched his ship for the last run of the contest. As the boat successfully navigated buoy after buoy it became increasingly apparent that this was a good run, the spectators became very interested, spontaneous applause arose after each difficult buoy was rounded, it finally passed through last two buoys for the only perfect trip around the course. It was needless to total up his score. Charles Thompson of Southern Cal. Model Power Boat & Yacht Assoc. had won this first contest. Bill Atwood of Glendale was third and Brett Page second. The last two named had tied with 370 points but since Brett had a better second run he was awarded second place.

Thompson's winning ship had a cruiser type hull, 38 inches overall with an 8" beam. Power was an electric 12 volt 0 gauge train motor with two surplus 6 volt plastic wet batteries for current. He used an English E.C.C. receiver and transmitter and Bonner escapement, having only a bang-bang rudder control.

Ted Bronikowski had one of the best looking boats in the contest, but Ted was plagued with fuel problems, his engine usually starving for fuel after a short run. He nevertheless won second place for craftsmanship, having a real beauty in the way of a ship. It was 40" overall, 11" beam, 465 MacNabb receiver, two speed engine, cabin lights and fully detailed.

The AVA-Toros are planning a series of small boat contests in Ganesha Park, Pomona, for the local youngsters for small boats without radio control; these will be announced at a later date.

—Dick Everett

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NY—Brooklyn, May 15. Model Flying Fair sponsored by N. Y. Mirror at Floyd Bennett Field. Ted Clogius, N. Y. Mirror, 235 E. 45th St., NYC.

NATION-WIDE. May 15. 5th Annual Armed Forces Day. Open House at air bases, military establishments and armories. For location of nearest display check your nearest military representative or Coordinator, Armed Forces Day, Office of Public Information, Department of Defense, Room 2E-780, Pentagon, Washington 25, D. C.

ILL—Chicago, May 16. Midwest Miniature Race Car Society meet. Carl Noward, 1384 Berdan Ave., Toledo, Ohio.

WISC—Milwaukee, May 16. Flying Electrons R/C model-plane meet. Victor Weisebrodt, 2100 E. Webster Pl.

CONN—Hartford, May 16. Modelplane team race sponsored by Greater Hartford Model Airplane Club. Richard Matava, 358 Prospect Ave.

CALIF—Santa Inez, May 16. Santa Barbara Modelers air-model Omnimeet. Changed from May 9. S. D. Hill, 1020 State St., Santa Barbara.

ILL—Galesburg, May 16. G.M.A.C. U-control air-model record trials. K. R. Johnson, 350 Park La.

PA—Harrisburg, May 23. Sky —Devils' air-model contest. W. E. Winter, 114 N. 46th St.

CONN—Hartford, May 23. Greater Hartford MAC air-model team race. Richard Matava, 358 Prospect Ave.

PENNA—Easton, May 23.—Model Airplane Doctors' air-model meet. Russ Sottosanti, 1113 Keane St. Easton 20394.

CALIF—Los Angeles, May 29-30. Modelplane State Championships sponsored by Calif. State Exchange Clubs. R. E. Gass, 2864 Rutgers Ave., Long Beach 15.

CALIF—Santa Ana, May 29-30. State air-model championships sponsored by Exchange Clubs. J. R. Donahue, Jr., 449 W. Manchester Ave., Inglewood.

NY—Long Island, May 30. Bklyn Sky Scrapers free flight air-model meet. G. T. Buck, 6428 Madison St., Ridgewood 27.

OKLA—Tulsa, May 30. Glue Dobbers air-model record trials. W. H. Kehr, 4940 N. Johnstown.

IND—New Castle, May 30. Midwest Miniature Race Car Society meet. Carl Noward, 1384 Berdan Ave., Toledo, Ohio.

NEBR—Scottsbluff, May 30-31. Peanut Pilots air-model meet. C. H. Adkins, 2418 Ave. "E".

KAN.—Goodland, June 5-6. Northwest Kansas Gashoppers air-model meet. Kenneth Armstrong, Goodland.

ILL—Chicago, June 6. Midwest Miniature Race Car Society meet. Carl Noward, 1384 Berdan Ave., Toledo, Ohio.

OHIO—Medina, June 6. Glo-Bug's air-model meet. Alex Norton, Jr., 716 Oak St.

ILL—Chicago, June 6. Chi-Northwest miniature race car meet. Carl Noward, 1384 Berdan Ave., Toledo, Ohio.

DEL—Wilmington, June 6. Exchange Club air-model meet. W. L. Knowles, 515 Shipley St.

SO CALIF—June 13. F.A.S.T. Club's air-model team races. Keith Storey, 8509 Higuera St., Culver City.

MO—Kansas City, June 13. Flying Fools' air-model meet. P. W. Asjes, 5313 Ralston, RR #3.

CALIF—Sacramento, June 13. N. Calif. Free Flight Council air-model meet. John Lenderman, Box 216, French Camp.

CALIF.—San Diego, June 13. Aeroneers' PAA-Load air-model contest. G. G. Wagner, Sr., 6851 Newbold Ct.

SO CALIF—June 13. F.A.S.T. Club's air-model team races. Keith Storey, 8509 Higuera St., Culver City.

PENNA—Erie, June 13. Erie MAC air-model meet. H. N. Parker, Jr., 2133 Fairmont Pkwy.

NJ—Perth Amboy, June 19-20. P.A.MAC "pylon" R/C closed course air-model meet. Robert Peru, R.D. 4, Rahway.

TEXAS—Beaumont, June 19-20.—Exchange Club air-model meet. Don Still, 790 Liberty Ave.

IND—Anderson, June 20. Midwest Miniature Race Car Society meet. Carl Noward, 1384 Berdan Ave., Toledo, Ohio.

MD—Hagerstown, June 20. Exchange-"Herald-Mail"-Fairchild air-model Flying Circus. John Young, Box 691.

TEXAS—El Paso, July 19-23. Air Force World-Wide model airplane championships, Biggs AFB. Major R. P. Nelson, Information Services Office, 810th Air Base Group, Biggs Air Force Base.

PENNA—Gettysburg, July 25. Modelplane contest sponsored by Gettysburg Model Airplane Club. J. H. Pitzer, 9 Hanover St.

ILL—Chicago, July 27-Aug. 1. National Championship Model Airplane Meet. A.M.A., 1025 Conn. Ave., N.W., Washington 6, D. C.

CALIF—Elsinore, July 27-Aug. 5. National Soaring Contest. Includes modelplane events. L. M. Licher, 767 Haverford Ave., Pacific Palisades.

IND—Anderson, Aug. National miniature race car championships. Carl Noward, 1384 Berdan Ave., Toledo, Ohio.

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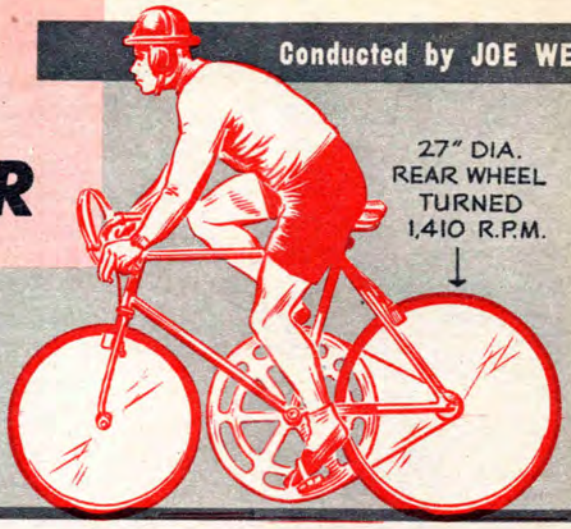


■ With an automobile running ahead as a windbreak, a French cyclist, José Meiffret, pedalled to a fantastic speed of 109.1 mph. The system of displacing some of the air pressure by a large screen or baffle mounted to a car or motorcycle is known as "motor pacing." The special bicycle had a 22½ inch dia. chainwheel. At 100 plus mph the chainwheel had to be pedalled at more than two revolutions per second. The cycle had wooden rims and weighed about 40 lbs. Pushed to a start, the cyclist reached top speed over a single timed kilometer for the record speed although 114 mph was unofficially reached.

May means a clean-up, adjustment and inspection job for your bicycle. Here are some tips that will improve the machine's performance, add to its life and—what is most important—make it safer to operate.

A thorough washing comes first. Use an auto washing detergent in a bucket, scrubbing your bike briskly with a bristle brush to remove grease and dirt. Remove the garden hose nozzle and rinse the machine. If greasy, oily spots persist, scrub them with a paint brush dipped in naphtha or kerosene and rinse with water.

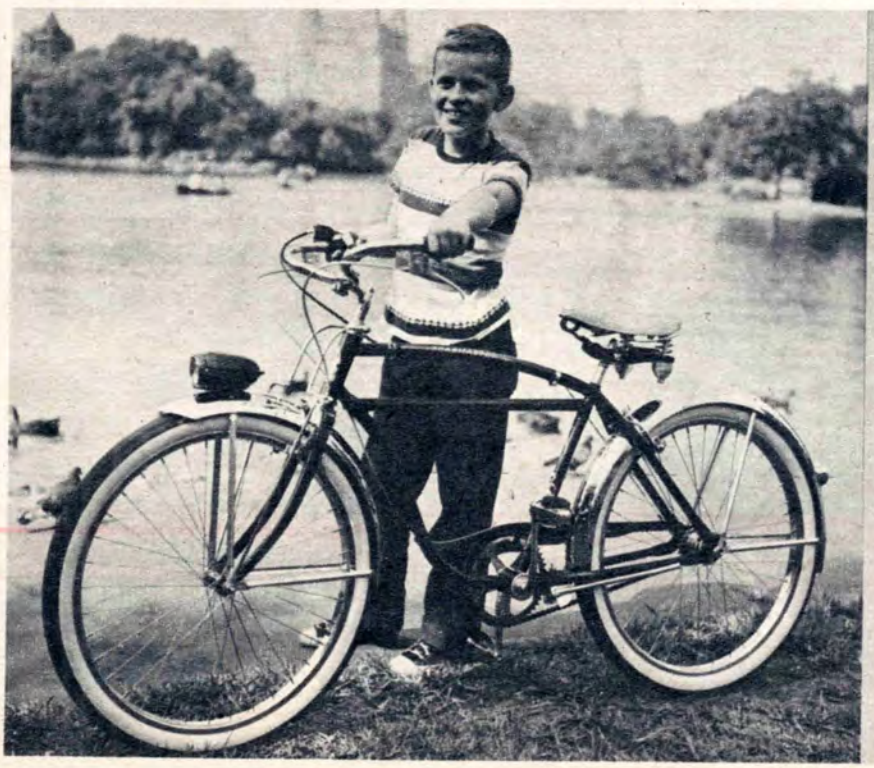
Auto finish cleaner will remove all film from enamel and chrome parts, but do not scrub too vigorously over decal ornaments or striping. Remove the cleaner with a soft cloth, then apply paste wax. Use this on chrome parts, too. Any rust spots on the chrome should be removed with fine steel wool or mild powdered kitchen cleanser and water.

Having selected a clean grassy spot, or using an old blanket as a "place mat," turn the bicycle upside down and closely inspect the tires. Watch for bruises, cuts, bulges and imbedded bits of glass, gravel or metal. Remove these with a nail. Check tire pressures by pinching against thumb nail. You should be able barely to dent the tire by pinching hard —anything softer is too little pressure for the average lightweight. "Balloons" as a rule have correct inflation pressure printed directly on the tire.

To remove a tire from a rim, first take out the valve core, pinch the beads together all around the circumference, making sure both beads are in the center rim depression. Now with a blunt tool pry one of the tire beads a little at a time until it freely comes off. Tire levers are available in sets of three which hook to spokes to facilitate tire removal.

Look at the chain. If it is very dirty or greasy it should be washed and lubricated. On chains of American manufacture the "master" link is slightly bulkier than the others and the word "Outside" is stamped on its removable plate. Slacken the rear wheel nuts to loosen the chain sufficiently to remove it from the chainwheel, find the master link, grasp the chain with thumbs on either side of the lock plate and "bend" the chain sideways, causing the master link pins to move toward each other, which will free the locking plate.

Roll the chain on itself and place it in a coffee tin half filled with kerosene,



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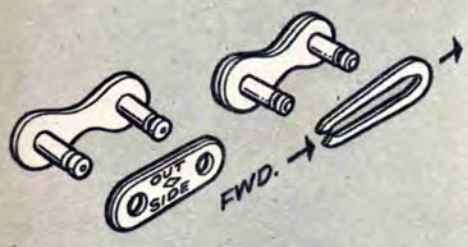

AMERICAN (LEFT) & BRITISH MASTER CHAIN LINKS

put on the lid and agitate gently. Change to fresh kerosene if the chain is quite dirty; let it remain in the can overnight if possible. Drain excess kerosene from the chain and wipe dry. Rinse the container, pour in some No. 10 motor oil, roll up the chain and immerse it in the oil. Drain the chain and wipe off excess oil.

Clean and dry the sprockets, inspect the teeth to make sure they have not worn to a hooked or sawtooth shape. If there is evidence of such wear, the sprockets should be replaced.

Before reinstalling the chain, check it carefully for broken or bent link plates and cracked or broken rollers. Thread the chain through the right rear frame triangle and replace the locking plate by reversing the procedure we outlined for its removal. Make certain the word "Outside" is visible on the locking plate and see that it engages the milled grooves in the pins correctly. Adjust chain tension so that there is about one inch movement midway between the sprockets on the slack side of the chain.

Most bicycle trouble is chain trouble.

Inspect pedals and install new rubber pads if needed. If there is looseness in the bearing, take up slack by removing lock nut on end of pedal spindle after having first removed the end plate or dust cap, screw the adjusting cone in snugly, replace washer and lock nut and tighten carefully while spinning pedal. It should turn freely.

Foreign bearings, either pedal, hub or fork bearings, should be disassembled carefully over a clean pan since the *balls are installed loose,* unlike American bearings, which have balls retained by a metal cage or ring. Three or four drops of oil applied on the outer cone are sufficient. Pedals may now be reassembled.

Inspect the hub bearings for undue slack. If there is no slack and the wheels run freely the bearings are in good condition. Lubricate them with 4 to 6 drops of oil through the hub holes. An excess of oil will run out the ends, down the spokes to the rim and finally to the tire where it hastens deterioration. Should the front hub bearing need adjustment, find the end of the axle next to the fork blade having the cone and thin lock nut. Loosen the outside axle nut and the lock nut and adjust the cone in the same manner as described for pedals.

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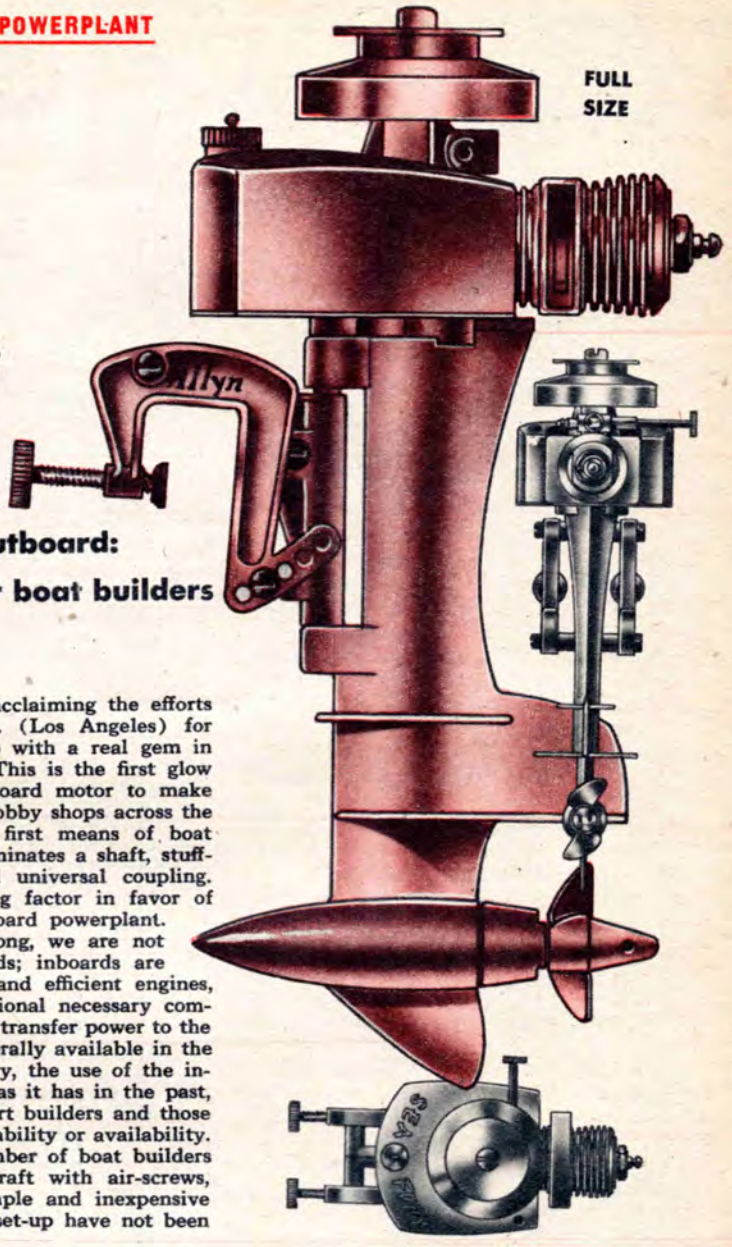

FULL SIZE

REAR & TOP VIEWS HALF SIZE

Glow plug outboard: new thrill for boat builders

■ We go all out acclaiming the efforts of Allyn Sales Co. (Los Angeles) for they have come up with a real gem in their "Sea Fury." This is the first glow plug-equipped outboard motor to make its appearance in hobby shops across the country. It is the first means of boat propulsion that eliminates a shaft, stuffing box, strut and universal coupling. This is the one big factor in favor of the miniature outboard powerplant.

Don't get us wrong, we are not condemning inboards; inboards are usually well-made and efficient engines, but until the additional necessary components required to transfer power to the prop are made generally available in the many sizes necessary, the use of the inboard will remain, as it has in the past, with the more expert builders and those with machine shop ability or availability.

Consider the number of boat builders who power their craft with air-screws, merely because simple and inexpensive drive-shaft-to-prop set-up have not been in plenitude.

The *Sea Fury* admirably meets the simple requirements of the average modeler who has leanings toward the nautical. Basically the power end here is little changed from Allyn's original .049 cu. in. displacement engine. Parts are more closely fitted in the boat engine. Whereas our test Sky Fury required very little break-in time, the *Sea Fury* was given an exceptionally long break-in period for a Half-A. The water tests were begun after the engine showed no signs of overheating or slowing down when running a full tank of fuel. Fuel consumption is rather high. A full tank lasts about two minutes.

Starting is quite simple and fast if you follow the instruction sheet supplied with the engine. A good starting cord can be made from any braided cord similar to round shoe laces of sufficient length to allow for six turns about the flywheel. Proper depth of the propeller in the water is very important in obtaining maximum amount of thrust.

Under "installation instructions" a suggested depth is given. However, this does not take into consideration the water line of the boat. Our tests proved that regardless of the model's water line, maximum thrust was obtained when the center line of the propeller was one inch below the surface of the water. We added 23 ounces of lead to the test model without reducing its forward speed below the point of acceptability.

After completion of the water tests under actual running conditions, the engine was disassembled. As stated previously, little change has been made to the engine itself. However, in order to convert it to outboard use some slight modifications were necessary.

Aside from its normal function, the crankpin now drives a slotted rotary disc type of crankshaft extension through the back cover plate which in this case is part of the die-cast tank assembly. A stainless steel drive shaft is swaged on its top end to fit snugly into the slotted crankshaft. One-to-one machine cut bevel gears—specially heat treated—transfer the engine's power to the propeller shaft. They are quiet running and apparently will have a long life. The ⅞" diameter cast aluminum propeller is threaded to its shaft and locked in place with a spinner type aluminum nut.

In place of the usual model airplane type drive washer, the *Sea Fury* comes equipped with a friction-driven machined aluminum flywheel of 1¼" diameter. All castings are of the highest quality and are among the cleanest we have seen.

Hobby Shop Directory

Model Builders! Here's a listing of the nation's leading hobby shops. You'll want to file it away—and when you're in the neighborhood, drop in and browse around. They're expecting you.

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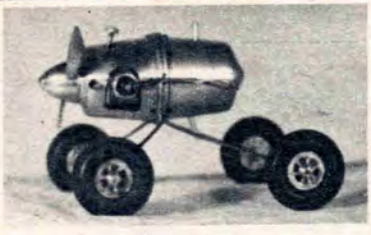

"My Favorite Model"

By R. LOPEZ CASTRO
HAVANA, CUBA

■ I call this model of mine "Aircar." It's a prop-driven racer of simple construction. The main body consists of two aluminum water cups joined end-to-end. Powerplant is a Royal Spitfire. The running gear and gas tank are fastened by three bolts to a pair of hardwood bulkheads. These are cut to fit the edges of the two cups to which they are attached by eight wood screws. Wheels are of two inch diameter. A neoprene tube fitted to engine's air intake and led to the outside through a hole in the cup permits choking. I have run the car in a 12-ft. circle; estimated speed, 40 mph.

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The Last Word on HOBBIES

■ A minor "tour de force"? Hal Roth, genial modelplane contest flyer of Berkeley, Calif., has a "limited class" rubber-powered design in this issue; last month his unusual "Hi-Spy" free flight endurance craft was featured. It's not favoritism, just that Hal's been out ahead of other designers. . . . We slipped last month: should have credited Anton Krogh with the outdoor shots of Fred Fescharek's fabulous Fokker Triplane—sorry, AK. . . . Lot of discussion around the office about Bobby Benson's B-Bar-B Helioport; correct spelling, you know, is *heliport*. Forgive us if we follow the lead of the Greeks. . . . Alex Dawydoff took exception to picture in this column last month—says it didn't look like the editor at all and libeled all tigers. So he snapped the shot below of us hard at work and titled it "Technical Editor's View of a Scowling Associate." At least he got some papers hanging on a desk lamp in the way of the balding bean. . . . Trust you like contents of this issue; we hope the model-hobby industry notes well our Catojet Racerdrome and Shootin' Stick models—both ideas lend themselves well to a lot of current merchandise. . . . Our semi-captive free flight experiments worked out so well we've amplified them and should have all the details in the next issue along with Killer-type combat kites . . . *and* . . . a photo road report of the appealing MG Magnette . . . *and* . . . a slick inboard speed model boat, "Ezi-Maid" . . . *and* . . . Bobby Benson's B-Bar-B Ranch Barn, corral, work buildings . . . *plus* . . . lot's more not the least of which is "Safe Shooting For Your High School Rifle Team" . . . We really are sorry to report that the making-models-at-camp round-up just didn't work out well enough to run. We discovered that hardly any camps utilized models for classes or rainy-day activity, but men, we gonna change that come next year!

—Al Lewis

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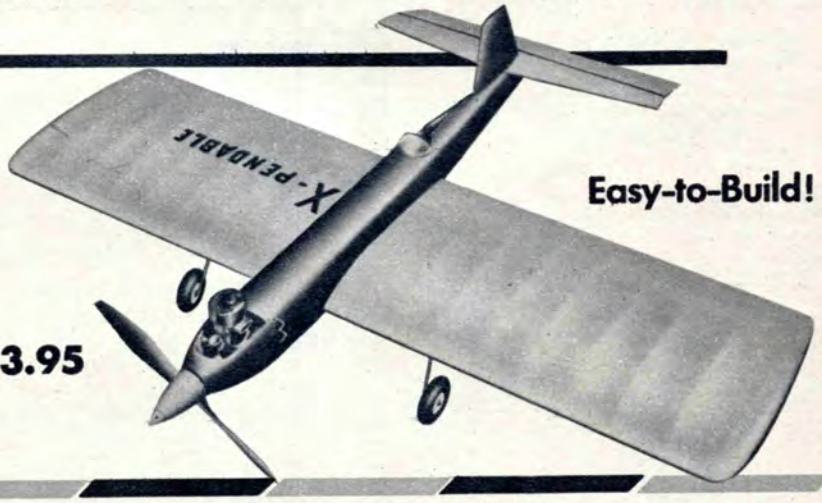

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Beech Aircraft's T-34A "MENTOR" Controliner

For .14 to .29 Engines — 33" Wingspan 1" Scale

Beech Aircrafts T-34A Primary Trainer has been ordered into production for the USAF. Powered by a 225 hp. Continental, the two-place "Mentor" has a ceiling of 20,000 feet, speed of 180, and a range of 785 miles.

- Jim Walker "U-Control"
- Optional "Autotrol Rudder"
- ¼" Plywood Motor Mount
- Formed Tricycle Gear
- Authentic Full-Color Decals
- Rubber Wheels, Hardware
- Embossed Celluloid Canopy
- Carved Nose Cowl Blocks
- Elevator and Rudder Hinges
- Die-Cut Balsa and Plywood
- Full Size Detailed Plans
- Shaped, Notched Wing Edges

Proportions of the T-34A are perfect for Controline flying. Easily assembled by the "Step-Keel" method, the fuselage is balsa planked. The wing is reinforced to absorb landing impact. Jim Walker "U-Control" is used together with the optional "Autotrol" Rudder system. Decals are complete and include even the smallest details.

$4.95

buy BERKELEY at your local dealer!

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.

Berkeley MEANS THE BEST RADIO CONTROL EQUIPMENT & MODEL KITS!

27 m.c. Crystal Control

"SUPER AEROTROL"

RADIO CONTROL

NO OPERATORS LICENSE REQUIRED!

"Super-Aerotrol" is the original 27.255 Citizens Band Radio Control. Since its introduction, it has outsold all other makes. We have tested many modifications of the original "Super-Aerotrol" but present "Super-Aerotrol" under equal conditions cannot be out-performed by any similar type equipment.

COMBINATION OFFER

DE-Super Aerotrol Combination Kit—#201-K

Combination Receiver-Transmitter Kit that sells for **$29.95**

Includes everything found in both DE-202K and DE-203K Kits. By buying them together it saves you **$3.95**

.14 to .23 Engines — 62" Wingspan

Dr. Walter Good's

"ROYAL RUDDERBUG" $6.95

A Proud Addition to Berkeley's Family of Fine Gas Models!

The entire model building world knows and respects Dr. Walt Good, many-time National R.C. Champion and renowned physicist. His new design is the best size for all-'round performance with single channel equipment.

The newest version of one of the most popular R.C. jobs ever designed. Simplified in construction, and improved in performance. A fine kit, produced to Berkeley's standards of completeness and engineering exactness.

READY-TO-OPERATE

SUPER AEROTROL

Including: **$49.95**

TRANSMITTER; ANTENNA; RECEIVER; ESCAPEMENT; & O-3 MILLIAMMETER.

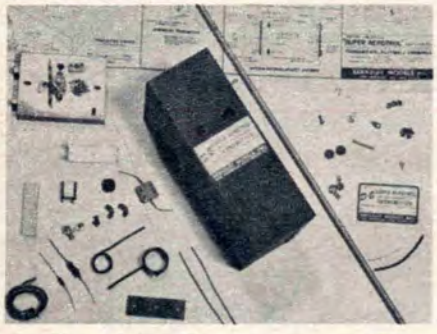
"Super Aerotrol" Crystal Controlled

TRANSMITTER

In Kit Form: less tube **$19.95**

- Portable — Self contained — No separate antenna — No external Batteries!
- Operates on 27.2 mc. • Weighs 3.5 lbs.

Kit includes all necessary parts (except tube and batteries): Precision Ground Crystal; Painted Metal Cabinet; Finished Sectional Antenna; stamped and formed chassis with all holes punched; all necessary components, resistors, condensers, coils and chokes; color coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included.



"Super Aerotrol"
Dust Core Tuned

RECEIVER

In Kit Form:
less tube **$13.95**

- NEW "locked-channel" dust-core tuning.
- Light in Weight, 2¾ oz. less batteries.
- Super-regenerator circuit, dependable.

Kit includes: Finished, tested sensitive relay; finished dust-core tuner; drilled bakelite base with condensors and eyelets attached; all electrical components, condensors, resistors, coils, chokes and potentiometer; all necessary contacts, and color-coded wiring. Can be assembled in less than two hours. Complete instructions are included.

$3.95

Variable Camber Wing for Radio Control Flying!

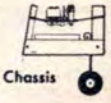
Slotted flaps may be depressed 10° for free-flight; depressed 25° for slow speed radio control flying; or raised 5° for high speed radio control flight.

Army Liaison YL-24

"HELIOPLANE"

For .049 to .14 Engines 38¾" Wingspan—1" Scale

$3.95



Radio Chassis

BOOTSTRAPS "A-RC"

For .09 to .14 Engines — 54" Wingspan
(Empty weight 21 oz. — Radio, Equip., 14 oz. max.)

Split rudder tab for separate trim adjustments. Clip-in prone engine mount, tri-cycle gear.

SEA BIRD "RC-28" "A-B" Race Boat —

For .09 to .35 Engines — 28" Length

$3.95

- Pre-Fabricated Mahogany Veneer Covering
- Completely Pre-Fabricated Balsa & Plywood
- Full Size Plans Including Radio Control Details

Designed for Radio Control!

The Sea Bird "RC-28" was designed for use either with or without radio control. Simple to build, it enables the builder to race the boat the next day after he buys the kit!

buy BERKELEY at your local dealer!

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Only PROCESSED FUELS

francisco fuels WILL GIVE YOU *Trouble-Free* WINNING PERFORMANCE!

You're only as fast as your fuel! Why ruin your engine, shorten its life and lose the opportunity to win by using raw, unstable mixtures which change characteristics with age and atmospheric conditions. And, yes—which are often loaded with sludge and carbon-forming impurities that not only foul the engine but cause costly "aldehyde acid destruction." We find these troublesome factors in every fuel we have had laboratory tested except our processed fuels and oils. As much as four times the impurities as in our lowest priced fuel.

Yes, our exclusive "gallon by gallon" processing is tedious and exacting. But we do it for the protection of you and your engine... our peace of mind and reputation. So why not make it a point to INSIST on the FUEL OF THE CHAMPIONS. IT COSTS NO MORE.

Only francisco fuels ARE PROCESSED 4 WAYS

Our fuels are fortified and processed against SPOILAGE and DETERIORATION—are ACCLIMATIZED for all weather conditions—contain special "secret process" ANTIRUST DETERGENTS—and are processed for VOLATANE CONTROL . . . besides being filtered and "hour by hour" tested. Francisco Fuels have no competition!

P. S.

Castor Oil is the "king of race engine lubricants" when processed properly. Plain mineral or synthetic oils will not pass our requirements for penetration or toughness. Francisco Castor Oil and Fuels are known as "The World's Finest"!

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Based on 30 Years' Specialization

There is a specially processed FRANCISCO FUEL for every engine size, type and operation requirement.
Ask your dealer for the one designed for your engine.
Also Treated Degummed Castor Oil Concentrates.

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Silloo

the new silhouette method of oil painting for fun.

With SILLOO you lay in color masses the way skilled artists do, developing your picture from contrasting lights, shadows, colors. SILLOO enables you to reproduce the deeply-glowing effects of master artists.

At Last! Entirely new, entirely different! An improved, easier-to-follow method of painting that gives you the essential "feel" of fine art. Trains you to break down a complex scene or subject into its component parts of light and shade, color and intensity. All suddenly blending into an entrancing whole as you complete your work.

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Contains All Materials to Complete Painting Ready for Framing — Pre-sketched Plastic Panel of 12" x 16" Art Subject, Charts for Each Color, Pre-mixed Artists Oil Paints, Artists Brush, Mat for Framing and Easy Instructions.

ONLY 2.98

If You're Looking for an Absorbing Hobby...

If you've always wanted to paint! If picturesque scenes and situations stir your emotions and capture your imagination, then start now with easy, instructive method that enables you to express your innermost feelings . . . and to achieve surprisingly beautiful results with the very first try. Better still, it trains your hand and eye — your basic art perception and understanding — while you actually paint colorful, lovely works that you'll be proud to show to your friends.

A Pattern of Color and Form: Not a Numbered Outline

SILLOO is not a numbered outline picture such as you used to color in kindergarten. Instead it is a related group of the color-and-form patterns that an artist trains himself to see.

Using these patterns as a guide, you lay on the separate oil-color masses, gradually building up a complete fine-arts picture that is entirely different from a mechanical drawing or photograph. The result is surprisingly beautiful. Yet anyone can do it the easy SILLOO way. Ask your hobby dealer today. Or drop a postcard for complete details and name of nearest dealer . . . to

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